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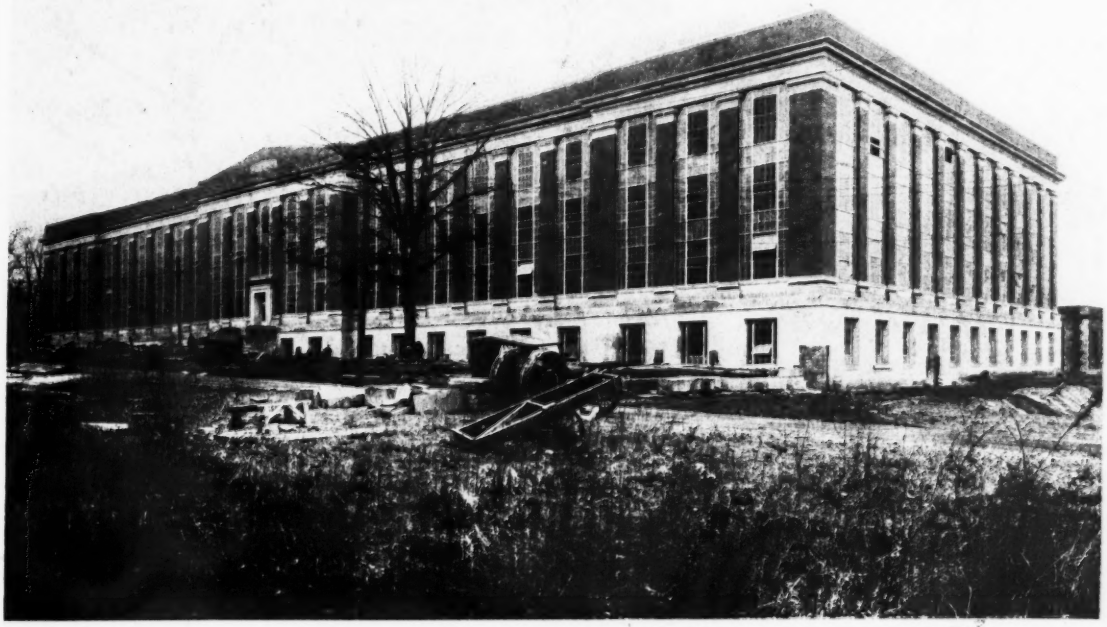
DOMESTIC ENGINEERING

The Plumbing and Heating Weekly



BUREAU OF STANDARDS, WASHINGTON, D. C. Donn & Deming, Archts.

EQUIPPED WITH

ROYAL FLUSH VALVES

Awarded GOLD MEDAL
San Francisco, 1915

Can't Be Held Open
To Waste Water

MANUFACTURED BY

SLOAN VALVE COMPANY, CHICAGO, ILL.

BRANCHES:

New York City, 101 Park Ave.
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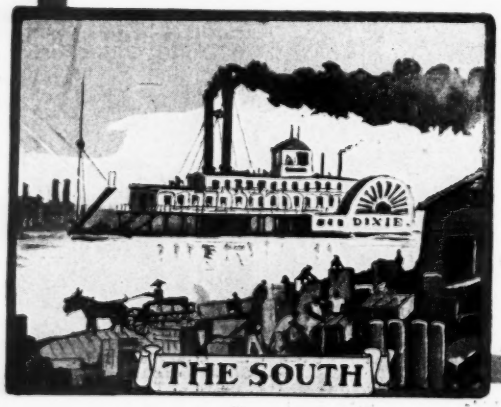
Chicago March 13, 1920 New York



From COAST to COAST

"Riverside Kopsteel" Range Boilers are now used in all parts of the country. Jobbers from Maine to California have recognized the high quality value of this Double Extra Heavy 6-year guaranteed Boiler. They are aware that in the long run it is the most economical range boiler on the market.

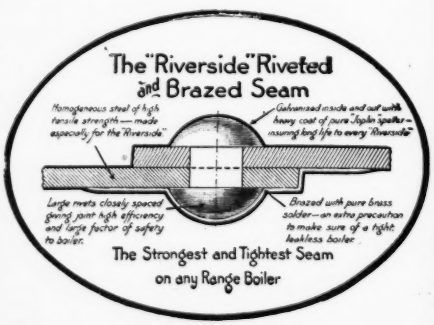
"Riverside Kopsteel" Range Boilers are made of the greatest rust-resisting steel or iron in existence. Specially selected copper-steel is used, and a double extra thickness assures a boiler with a long life. Each boiler is carefully tested to 300 lbs. plus and is marked with a definite guarantee of 6 years at 150 lbs. working pressure.

"Riverside Kopsteel" Range Boilers, like all "Riverside" products, are Riveted and Brazed. This is the only way to make a range boiler which will stay out on the job. They are "built to **last** and not to leak."

The cut on the right shows a "Riverside" Standard Boiler, which is too well known to need further comment.

TRADE MARK
RIVERSIDE
REG. U.S. PAT. OFF.

The trademark of the word "Riverside" is nationally recognized as The Guarantee of Quality in Range Boilers. Insist upon your boilers bearing this stencil. You will be interested in a sample of actual seam cut from a regular "Riverside." Note details of construction as shown in cut below.


The "Riverside" Riveted and Brazed Seam
Homogeneous steel of high tensile strength — made especially for the "Riverside"
Galvanized inside and out with heavy coat of pure Joplin spelter — assuring long life to every "Riverside"
Large rivets closely spaced giving joint high efficiency and large factor of safety to boiler.
Brazed with pure brass solder — an extra precaution to make sure of a tight, leakless boiler.
The Strongest and Tightest Seam on any Range Boiler

Riverside Boiler Works, Inc.
The Range Boiler Builders
Cambridge - - Mass.

EDITORIAL
DOMESTIC ENGINEERING

Whole No. 1422 CHICAGO, MARCH 13, 1920 Vol. 90, No. 11

Your co-operation is sought in the standardization of plumbing materials. Send your suggestions to each committee. Bring up the matter of standardization in your local and state meetings. Action is what counts, always!

STANDARDIZATION BUREAU COMMITTEES APPOINTED.

A SPLENDID representation of all who are interested in bringing about the standardization of plumbing materials and installation has been effected in the appointment of the various committees to act on the National Bureau of Standardization. The National Association of Master Plumbers, the American Society of Sanitary Engineering, and all of the manufacturers' and jobbers' associations are joined together to bring about reforms which will have the endorsement of all who are interested in the welfare of the industry. The co-operation of every master plumber in the country will simplify and expedite the work of the different committees, and it is the duty of every member of the craft to help in this undertaking. Elsewhere in this issue will be found a complete list of committees, and on pages 491-492 of the December 6th, 1919, issue of "Domestic Engineering" will be found the recommendations of the bureau. Fine work can be accomplished by the different local and state associations by discussing the suggested modifications and changes and sending their views to the bureau. In this way, real progress can be made and the work of the bureau will be lightened.

SOUTH DAKOTA GOES AHEAD.

THE master plumbers of the United States are so well organized that it is an event to record the formation of a new state association This, however, will probably take place on March 19th and 20th, when the master plumbers of South Dakota convene in Sioux Falls. Congratulations are due to those who have been responsible for bringing about this important gathering and to the master plumbers of that state for their progressiveness. The National Association and all state bodies will welcome South Dakota to the fold. Getting the right start is always important, and there is every assurance that this notable meeting will be a most valuable and enthusiastic one. Three men prominent in association work will help to organize the association along the right lines—William J. Woolley, secretary-manager of the National Trade Extension Bureau; W. W. Hughes, national director and president of the Minnesota association, and William Redieske, secretary of the Minnesota organization.

South Dakota is going ahead, and "Domestic Engineering" is happy to join with the plumbing fraternity of the United States in wishing the new association every success.

TWELVE THINGS TO REMEMBER.

MANY of us, in our busy, everyday life, give little attention to many things that should always be before us in our efforts to attain a position of influence, happiness and prosperity. The following are well worth remembering:

The value of time
The success of perseverance
The pleasure of working
The dignity of simplicity
The worth of character
The power of kindness
The influence of example
The obligation of duty
The wisdom of economy
The virtue of patience
The improvement of talent
The joy of originating.

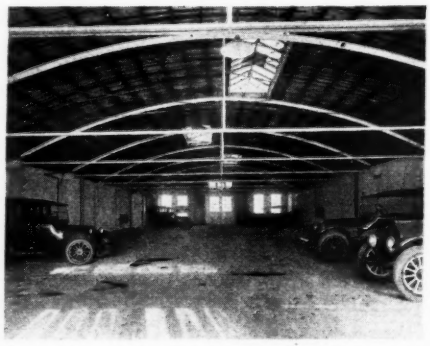
PRICES GOING HIGHER.

THE 1920 building program has every promise of being the greatest in the history of the country, and it is to be hoped that construction will not be retarded. Prices for materials and labor, however, are by no means stabilized. Skilled workmen in many of the larger, and even smaller, cities are demanding a 25 per cent increase in wages, and finished products are not only scarce but are advancing in price. The plumbing and heating contractor is in business to make money, and the man who is not giving careful consideration to every factor dominating the present situation will find it costly.

DRAINAGE *of* PUBLIC *and* PRIVATE GARAGES

How to Keep the Garage Floor Clean and in Fit Condition to Work Upon —Various Types of Sand and Oil Arrestors

By William Hutton



IF there is a sloppier, more unattractive place in which to work than the average small town garage toward the close of a day in early winter it is yet to be found. Cars come in dripping mud and melting snow and make a puddle on the floor that leaves everything uncomfortable to touch, walk on, or (if you happen to be a repair man) lie down upon. And the reason is poor drainage.

Now that every small town in the country has, or is going to have, its brick garage, the type seems to be standardized, this matter is worthy of the attention of plumbers. A little care in designing the drainage and the provision of proper traps, of which there are plenty available, will make a wonderful difference in the comfort of the employes and patrons and the appearance of the place.

Some towns insist upon the removal of all gasoline from the drainage before it is allowed to pass into the sewer. Where this provision is enforced, there usually is a standard type of trap that is specified by the town authorities and this of course must be used. But by judicious placing and the grading of the floor so as to remove water quickly, it does not matter whether the trap is a large or a small one. The result will be that the floor will run the water off quickly and dry in a short time.

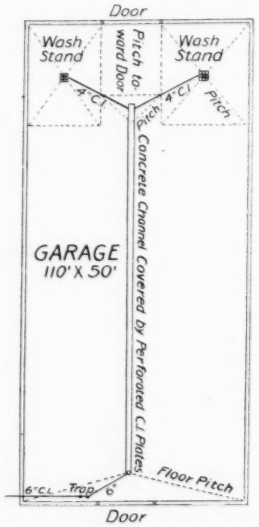


Fig. 1—Garage Drained by Channel.

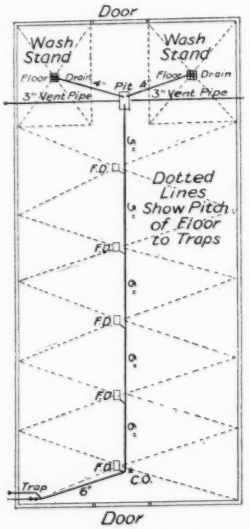


Fig. 2—Garage Drained by Floor Traps.

The illustrations in Figs. 1 and 2 have been prepared to show two distinct methods of draining a garage in the shortest possible time. In Fig. 1 the floor is pitched toward the center of the building and in the floor is constructed a channel which varies in size and depth according to the size of the building. Of course this must be graded toward the outlet end so that the depth is more at the outlet than at the opposite end. A pitch of one in ten works out all right, and for a garage of the very common size, 110 ft. x 50 ft., a channel 8 in. wide is satisfactory.

Cast iron perforated plates are laid over the channel in sections from 3 to 4 ft. long for easy removal. In the garage illustrated there are two wash-stands which are drained into the center channel. Of course, a considerable quantity of sand and mud finds its way through the floor strainers into the channel, but this is deposited as it flows to the outlet and is removed with ease by the attendants.

As the floor of the garage pitches toward the center the drip from any car flows readily to the center channel without flowing all over the place. If the requirements of the town call for a special oil and gasoline intercepting trap, this can be used just as easily as any other kind. The heavier oils as a rule settle in the channel also and are easily removed along with the sand and sediment.

There is no need to use anything but strainers in the wash stand floors. In fact, it would defeat the plan if traps were used as it is intended that the mud should be deposited in the channel. The sizes of the pipes shown in the plan may be varied according to local conditions, but those given will carry away all of the water from the stands and from the floor in a garage of this size in normal usage.

The cast iron plates are 1 inch in thickness and are wider than the channel so that they rest on a recess in the floor or preferably in angle irons let into the floor to support them. If the plates are not flush or if the concrete is not of the best, heavy cars passing over them are likely to break the edge and eventually make an unsightly appearance, even if it does not affect the utility of the channel.

If the ordinary type of house trap is used, there should be handholes extended to the floor level, or to a point slightly under it, so that the trap is accessible for inspection and cleaning. No fresh air intake is necessary, of course, as the drain is an open one inside the trap.

In Fig. 2 the plan shows the use of pipe laid under the floor. If there is a cellar it may be hung from the floor beams. The floor is pitched to drains placed at suitable intervals and about the center of the building. Thus they

catch much of the water dripping from cars as they enter and are easily accessible even when the garage is well filled. Various types of floor traps are available for such work. Two good ones are shown in Figs. 5 and 6. In Fig. 5 the trap is a combination of water seal and sand bucket. The bucket is hinged at the side opposite the cover hinge, so that when the cover is lifted it is easy to turn the bucket up and dump the contents on the floor. There is a cleanout plug in a good position on the bend to admit a cleaning rod when this is necessary.

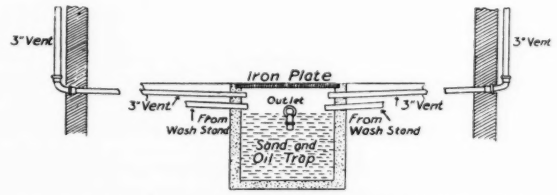


Fig. 3—Detail, Section Through End, of Sand and Oil Trap.

A trap with the same characteristics is shown in Fig 6. The bucket in this trap has a row of holes around it just under the flange, by which it is supported in the well. There is a lip projecting into the bucket from the cover so that the flow is directed into the center of the bucket and the water will rise along the outer walls of the bucket to overflow into the well of the trap. The outlet bend is adjustable to any angle in the hub and this feature is of advantage in many cases. The square flange, buried in the concrete, provides a good break to prevent water flowing down the outside surface should the concrete shrink and leave opportunity for leakage at this point.

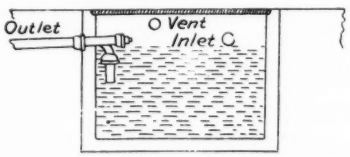


Fig. 4—Section Through Sand and Oil Trap.

In passing, it may be said that both of these traps are well adapted for use in private garages housing one or two cars and that their use will be the means of preventing many stoppages in the drains that otherwise might occur.

Returning to Fig. 2, it will be noted that the wash stands

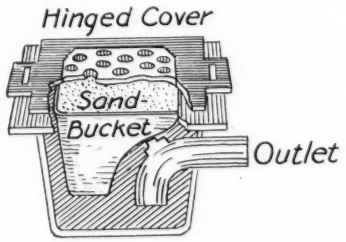


Fig. 5—Sand Trap and Floor Drain. Bucket Is Hinged on Opposite Side to Cover and Tilts to Dump Sand on Floor. Cleanout Plug in Trap Bend.

discharge into a pit constructed in the floor. This is for the purpose of intercepting sand, oil, and gasoline, before it can get into the long house drain. Specially constructed iron catch-pits may be used in preference to the concrete pit if preferred. If there is a cellar under the garage it may be necessary to use iron pits, but in this case the concrete is cheaper and highly efficient.

Figs. 3 and 4 shows sections through the catch pit. The vent pipes are intended to maintain a constant current of air over the surface of the water in the trap. It is expected that this will assist in the evaporation of such gasoline as finds its way into the drain, although the evaporation is somewhat doubtful with the heavy grades now used, at least in cold weather. The vent pipes are carried through the walls and up to a point near the roof.

The inlets from the wash stand deliver over the water line

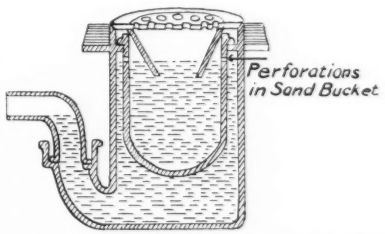


Fig. 6—Garage Trap with Removable Sand Bucket and Adjustable Outlet.

without dip pipes. The outlet is trapped and a cleanout is provided in the end of a sanitary tee to provide access to the long pipe should it become choked. Sand and heavy oils are removed from the pit as often as necessary and the iron plate over the top gives easy access.

If preferred, the floor outlets in the washstands may be strainers only as the pit will take care of all the sand and mud and the provision of traps at the stands only complicates the job. It may be of interest to note that in constructing the jobs, the arrangement shown in Fig. 2 came out cheaper than that in Fig. 1. This may be due to the high price asked for the channel covers, but such was the case.

The overhead carriage washers are hung directly over the wash stands and there are also hose bibbs at several points to enable the attendants to wash floors or cars and to draw water as required.

The dotted lines in the plans indicate the pitch of the floors which are expected to drain in the shortest possible time.

Shop Shorts, No. 1.—Cleaning the shop window takes fifteen minutes' time, but is worth fifteen times fifteen its value in increased sales.

Shop Shorts, No. 2.—A good newspaper advertisement becomes mighty uninteresting if constantly repeated. Don't continue to throw money away, but liven up your ads by getting outside help if you can't help yourself.

Shop Shorts, No. 3.—There should be a place for everything in the shop and everything should be in its place. The time lost chasing around for scattered tools, etc., is a liability.

Shop Shorts, No. 4.—Dead stock never pays dividends. Get rid of the old stuff, even at bargain prices. That money will draw interest in a bank or can be used to buy something which can be sold at a profit.

Shop Shorts, No. 5.—A sloppy shop is an open admission of lack of pride in one's business and conveys a bad impression to the customer. Fifteen minutes spent every morning getting the place spick and span is time well spent to start the day.

Shop Shorts, No. 6.—When a customer calls up about a trouble job, get him to tell, as nearly as possible, exactly what the trouble is. Tell him that specific details mean smaller bills and that the policy of your shop is to avoid making extra trips wherever possible.

Shop Shorts, No. 7.—Special attention to specialties around the showroom usually mean special trips to the bank to make an especially nice showing on the bank balance.

WHAT *a* PLUMBER SHOULD KNOW ABOUT ELECTRICITY

First of a Series of Articles Showing How Plumber Can Profit by Understanding Electrical Terms and Their Application

By George W. Hill

Geo. W. Hill.

THE writer feels that owing to the wonderful strides made in the past few years in the modernizing of both city and country homes, that each plumber should have a reasonable knowledge of electricity, because electricity plays a major part in the modernization of our homes. In the country it is almost impossible to enjoy the sanitary conveniences without electric current to drive deep well and suction pumps. At least, this form of power is more dependable and much more convenient than any other known thus far.

The plumber should not, perhaps, know as much about electricity as a regularly licensed electrician should know nor, perhaps, a wireman, but he should know certain things about it in order to make it possible for him to talk intelligently with relation to certain installations which come under the supervision naturally of the plumber, such as pumps, etc.

He should know when a customer comes to him for the purpose of purchasing an electrical driven pump that it will be necessary for him to recommend a certain sized motor for driving this pump as well as to know whether or not the motor is to be a direct current or alternating current motor. He should know whether it is to be 60 cycle or 125 cycle current to which this motor is to be attached.

He should know whether he is to order a starting box with the motor or whether it is to be single phase or three phase motor.

Frequently plumbers are called upon to connect electrically driven pumps to small isolated farm lighting plants composed of an engine, generator, switchboard and storage battery. He should, therefore, have some knowledge of storage batteries, their voltage, amperage and watt output, etc. Pump manufacturers invariably furnish certain electrical data in their catalogs and bulletins and these terms should be readily understood by the plumber.

New Men in Electrical Field.

The past few years have brought about a wonderful change in the class of men who handle electricity. For a good many years it was thought that only those who had obtained a sheepskin at some university were the only ones who had a moral right to handle this mysterious, and oftentimes thought dangerous stuff, electricity, volts, watts, amperes, ohms, etc.

Since the advent of the small unit electric lighting plant for use on farms we find men in nearly every walk of life selling them. Hardware dealers, implement men, plumbers, druggists, and in fact, any one who has been shown the wonderful profit accruing from the sale of such plants.

In order to teach these men to talk intelligently upon the subject of electricity as applied to the country home, the ranch or farm, the country store or moving picture show, a number of manufacturers of such plants have issued from time to time bulletins and instruction books which answer the question in the most practical and simple way. What's a Watt?

No Mystery About Electricity.

These men have learned that this mysterious Watt was not obtained from the ethereal space, nor was it an invention of Thomas A. Edison or any other great chemist or electrical wizard, but they have learned that the watt derived its name from the man who discovered that there was a means of measuring the amount of energy produced by an electrical current, just as we are able to measure the horsepower produced by a stream of water traveling at a certain speed and volume.

The flow of electrical current over a conductor bears the nearest relation to a stream of water flowing through a conductor or a stream of water flowing through a water meter. Therefore, the plumber should be the one man outside of the electrical profession who should grasp these few fundamental principles much easier than many others whose daily problems are foreign to such calculation.

The water motor requires a certain quantity of water flowing at a certain pressure to produce certain energy. The electric motor requires a certain quantity of electricity flowing at a certain pressure to produce a certain energy.

The electrical dynamo or generator may be compared with the pressure tank or supply.

The pipe leading from the pressure tank or supply may be compared with the electric wire leading from the dynamo to the electric motor. The horse power developed in either case depends upon pressure, quantity, resistance of conductor, etc.

The horse power or energy developed at an electric motor depends upon resistance, pressure, quantity flow of current. This same principle applies to water.

If a stream of water traveling at a certain number of feet per minute or at a certain pressure speed and a certain quantity of gallons per hour were applied to a water wheel it would produce a certain measurable energy usually calculated in horsepower. In other words, if this energy so produced would raise 33,000 pounds one foot in one minute, or 550 pounds in one second, it would be called horsepower.

If a stream of electricity traveling at certain voltage (speed) and a certain quantity (ampere) per hour were to be applied to an electrical motor properly wound for this current, it would produce a certain energy horsepower.

The writer does not feel in this article that he should treat upon a number of different subjects electrical which do not come within the every-day practical use of electricity but does feel that a few hints like the above will set the average reader to thinking and he will soon see that the electrical profession is not any more mysterious or intricate than the profession of plumbing. He further refrains from going into details on many of the subjects at this time as it is his intention to treat on each subject separately in subsequent articles which will appear in this journal.

You will note that the writer uses the word "profession" in speaking of the plumber and electrician, and feels that he is justified in the presumption that they are professors. I say professor, for I honestly believe the day has come when we should look upon plumbing as a profession rather than a trade. The plumbing business has become one of great science. In the beginning, I presume, the plumber was classified as a tradesman, but since we have organized knowledge of sanitation, and since this knowledge has been so organized that it may be taught readily we should consider those who follow this business professionally just as much as we should apply the word "profession" to the physician or dentist.

Plumber Looks on Electric Business Favorably.

An extract from a survey recently made in the interest of the plumbing trade by "Domestic Engineering" should be interesting to the reader as it comes from those who are actively engaged in the field work, or in the work of selling electric lighting plants and electrically driven pumps operated in connection therewith.

"On entering the shop the investigator noticed the pleasant little office with a big desk on which were neatly arranged the latest catalogs. A man came forward from the rear of the shop with an exceptionally pleasant greeting.

"'My name is Zirbut, glad to see you,' he said as the investigator explained his business. 'Do we sell lighting plants? Yes, we took on an agency a short time ago and have already installed two of them and we have a number of good prospects right now.'

"You see during the war there was very little building around here, but now with the busy season about over, the farmers are planning some very fine homes and other buildings, for the last few years have brought them a lot of money. They want modern homes with all the latest improvements. When we hear of a man who intends to build we call on him as we are well known around here and have many satisfied customers who boost for us. We have no trouble in getting the heating and plumbing business.

"Most of them want a good water system and then we show them the advantages of having a good lighting system put in at the same time. The lighting plants and water systems work hand in hand. We show them why it is better to put in a little more money in the first place and get an outfit that is large enough and substantial enough to take care of their increased demands of the future. Then we *guarantee them service,* which they can't get from some one who comes in and sells them a small cheap plant and moves away to another place. Most farmers hate to be bothered when they are busy in the field, so we drive out in the evening and talk to them and then drive them over to one of the plants which we have installed. They can see the lights burning and see the water running.

"There is good money in the lighting plant and accessory business for the fellow who goes after it right. We have a good start and are going to keep after it."

From the above you should be able to see that the electric plant business is looked upon with considerable favor by many plumbing institutions, and those who go after it right and make a business of it are finding that there is plenty of opportunity to increase their profits each year with practically no increase in their overhead."

The great trouble with many plumbers is that as soon as some one says electricity, they begin to think of volts, amperes, watts, ohms, etc., and throw up their hands and begin to back away as though the salesman was about to throw an ounce of nitroglycerine upon the floor. If they could understand these terms and could have a little knowledge with reference to these things, and understand that by selling electric lighting plants they were opening up an avenue through which they could reach hundreds of customers for sanitary conveniences and water systems which would not otherwise be interested, they would look upon the proposition with much more favor.

Farm Light Plant Opens Up Big Sales Possibilities.

When a farmer purchases an electric light and power plant he begins to see that such power makes it possible for him to enjoy the same sanitary conveniences that are enjoyed by his city brothers and he begins to think about these things. He contemplates and visualizes them in his home until some day he asks the plumber if it is possible for him to install an automatic water system, giving him pressure of say fifty pounds, and can he install this water system and furnish him with modern sanitary conveniences such as running hot and cold water, bath tubs, lavatories, bowls, etc. If the plumber understands electricity to some extent he immediately tells the customer that there is no modern convenience enjoyed in the city home which his country customer cannot enjoy if he has electrical power in his home.

This makes it perfectly easy for the plumber to sell him a large bill of goods and to enter into a contract for the installation of same at a very good price, as competition, thus far, is less keen in the country work than in the city, and often times and especially if the customer is made to understand that the plumber has some knowledge of electricity and feels that the devises which he orders for him will operate perfectly connected with the system which he already has, or which he will purchase from the plumber.

It is the intention of the writer to prepare a series of articles for "Domestic Engineering," giving the benefit of his experience in this particular line of business covering a period of a number of years both from the standpoint of a local dealer as well as that of a manufacturer's representative.

He has made a careful study of this business of farm electric lighting plants for ten or twelve years and can point to a number of very successful distributors and dealers whom he has induced to enter the field. Among them quite a number of plumbers may be included.

(To be Continued.)

A Live Topic For Local And State Meetings.

Standardization of plumbing materials is under way, and this move furnishes a mighty live topic for discussion at all local and state meetings. Turn to pages 491-2 of the December 6, 1919, issue of "Domestic Engineering" and familiarize yourselves with the recommendations of the Bureau. Here's a subject that, taken up actively, will result in well attended and interesting meetings. Act now!

Shop Shorts, No. 8.—If the junkman makes you a price on a lot of scrap, turn to your trade paper to find out the current prices of old materials before making a deal.

Shop Shorts, No. 9.—A few washing machine sales every month mean mighty nice profits at the end of the year. Have you looked into this proposition?

Shop Shorts, No. 10.—The modern farmer is no longer taking a flyer in gold bricks, but is wisely investing in plumbing, heating and lighting equipment and home labor-saving devices. Are you getting your share of rural business?

Shop Shorts, No. 11.—Greater production was never more desirable than today, but bad air is not conducive to high factory efficiency. The installation of ventilating equipment solves the problem.

HEAT LOSSES *from* DIRECT RADIATION

Excerpt from Paper Read Before the Annual Meeting of the American Society of Heating and Ventilating Engineers, in New York City, January 1920

By Professor John R. Allen

Director of The Research Bureau of A. S. H. & V. E.

IT is the purpose of this article to bring together all of the data which seem reliable upon the subject of heat losses from direct radiation. There have been many experiments made by different persons. Some of the results have been reported and some have been allowed to lie dormant. It is the intention of this article to bring together these various results in an endeavor to show the effect which the changes in the shape and size of a radiator, together with the conditions of operation, have upon the heat transmission. This article also discusses the theory of heat transfer from direct radiation and the effect of radiation and convection. All the results in the tables and figures are expressed in B. t. u given off per square foot per hour and not in the form of a constant. The reason for not using a constant will be seen when the theory of heat transfer has been considered. In work of this kind it is not possible to give results with great

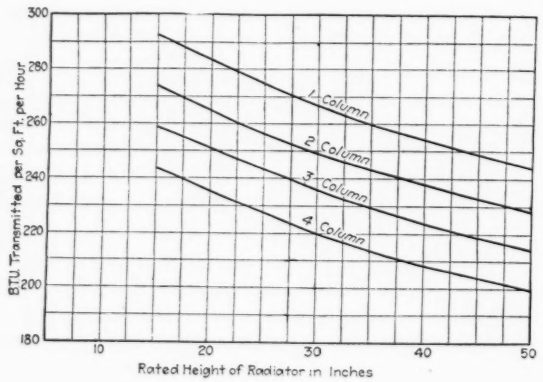


Fig. 1. Heat Transmissions for Different Heights and Numbers of Columns of Radiators.

accuracy but it is the author's opinion that in most cases the accuracy will be close to 5 per cent, and probably in all cases within 10 per cent.

Heat Losses from a Direct Radiator.

A direct radiator is one that is located in the room to be heated, has the air passed over it by natural circulation, and is not connected with the outside air. Direct radiators lose heat in two ways by radiation and by convection. The heat loss by radiation is the heat which leaves the radiator independently of any heat carried away by the air circulating around the radiator. It passes from the radiator in straight lines in the same way that light passes away from a source of light, and it does not heat the medium through which it passes.

The loss by convection or contact of air is the heat which is carried away by the air coming in contact with the hot surface of the radiator and being heated. This air, when it is heated, rises, new air comes in to take its place, and we have formed, a current of hot air rising from the radiator. The heat carried away by this current of hot air is the heat lost by convection.

In the following paragraphs will be found a discussion of the effect of various factors upon the heat loss from a direct radiator. It is the intention to show the effect of different heights, lengths, and widths of radiators upon the heat transmission; also the effect of steam and room temperature, and various other factors that have appreciable bearing upon the heat transmission from direct radiators. It has been customary to assume that a radiator lost about the same amount of heat irrespective of its form or size or condition of operation. It will be seen, however, that there are very wide ranges of heat transmission depending upon the conditions of operation.

Effect of Heat Transmission for Different Heights and Numbers of Columns of Radiators.

The width of a radiator is usually expressed as a certain number of columns and the height in inches from the floor to the top of the radiator. Table 1 and Fig. 1 show the heat transmission for cast iron radiators in B. t. u. per hour per square foot of radiator surface in still air at 70 deg. with a steam temperature of 215 deg. The table is made up for radiators of 10 sections in length with different numbers of columns and heights. For numbers of sections less than 10, as will be seen in a following paragraph, the heat transmission would be increased.

Table 1. B. t. u. Transmitted Per Square Foot of Radiator Per Hour for Different Heights and Numbers of Columns.
Steam Temperature 215 deg. Fahr.
Room Temperature 70 deg. Fahr.

Height of Radiator	1 Column	2 Column	3 Column	4 Column
45		233	218	204
38	256	240	226	210
32	265	247	234	218
26	273	255	242	226
23	278	260		
22			248	232
20	283	265		
18			254	238

Effect of Heat Transmission for Different Widths of Radiators.

The comparison of heat transmission through radiators by different numbers of columns is not strictly correct, as the effect is not due to the number of columns, but is more nearly due to the actual width of the radiator in inches. In order to show this effect, Fig. 2 has been drawn and from this figure has been compiled Table 2. This figure shows the

effect of width of radiators on heat transmission under the same general conditions as in Fig. 1. It will be noticed that the heat transmission varies, depending on the actual number of inches in width even including pipe coils approximately, and will be found to compare very favorably with the actual experiments that have been made.

Table 2. Heat Transmission for Different Widths of Radiator Expressed in Inches.

Steam at 215 deg. Fahr.
Room at 70 deg. Fahr.
10 Sections of Radiator

Width of Radiator in inches	Height of Radiator 20 in.	26 in.	38 in.	Width corresponds with
3	310	297	288	Wall Coil
4½	287	274	258	Single Column
7⅛	264	251	236	Two Column
9	253	240	226	Three Column
12½	239	225	211	Four Column

Effect of Heat Transmission for Radiators of Varying Lengths.

The effect on heat transmission of increasing the length of a radiator is shown in Table 3 and Fig. 3. The curves show that the length of a radiator has a marked effect when the

Table 3. Heat Transmission for Radiators of Varying Lengths

Steam at 215 deg. Fahr.
Room at 70 deg. Fahr.

Length of Radiator in Sections	Height of Radiator 38 in.	32 in.	26 in.	23 in.
1	387.8	389.0	393.7	391.6
2	302.4	304.0	305.8	308.4
3	274.0	275.8	280.0	282.3
4	260.6	263.3	265.8	269.2
5	252.6	254.0	257.8	259.6
6	247.0	249.2	253.3	254.7
7	242.8	244.9	248.5	251.2
8	240.0	241.7	245.7	248.5
9	237.8	239.8	243.4	246.5
10	235.8	237.8	241.6	244.8
11	234.4	236.4	239.6	243.1
12	233.0	235.2	239.1	242.0
13	232.1	234.2	238.0	240.5
14	231.2	233.6	237.1	239.5
15	230.4	232.6	236.2	238.7
16	229.7	232.0	235.6	237.9
17	229.1	231.1	235.1	237.2
18	228.5	230.6	234.6	237.0
19	228.0	230.2	234.0	236.5
20	227.6	229.7	233.6	235.9

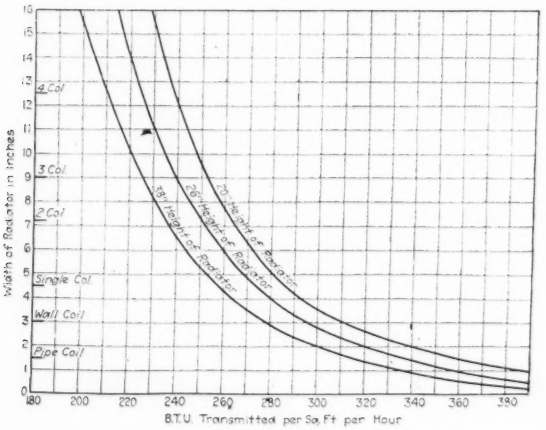


Fig. 2. Heat Transmissions for Different Widths of Radiators.

radiator is under 6 sections in length. Above 10 sections the effect of length, in most cases, can be neglected without introducing any appreciable error. The reason for this may easily be explained. In the short radiators the effect of the ends is much more apparent than in the long radiators. The effect of the end is to increase the radiating surface in proportion to the convecting surface so that in a short radiator we get a larger proportion of radiant heat than in the long radiator. Curves are plotted for only two heights of radiator, as the relative effect of length remains practically the same in radiators of different heights.

A radiator may also be lengthened by increasing the spacing. A few experiments are available which show the effect of spacing. If the spacing of the standard two-column, 38-

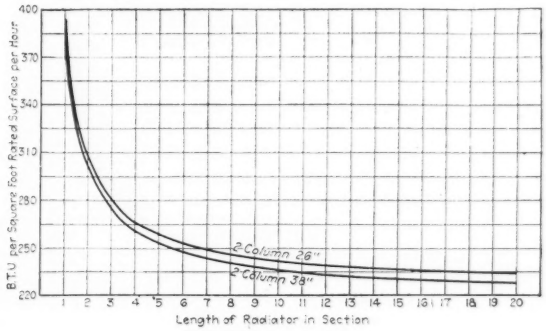


Fig. 3. Heat Transmissions for Radiators of Varying Lengths.

inch radiator is changed from 2½ inches to 3 inches, the results show that the heat loss is increased about 7 per cent, which would correspond with the results obtained by using the general expression given at the end of this article. The

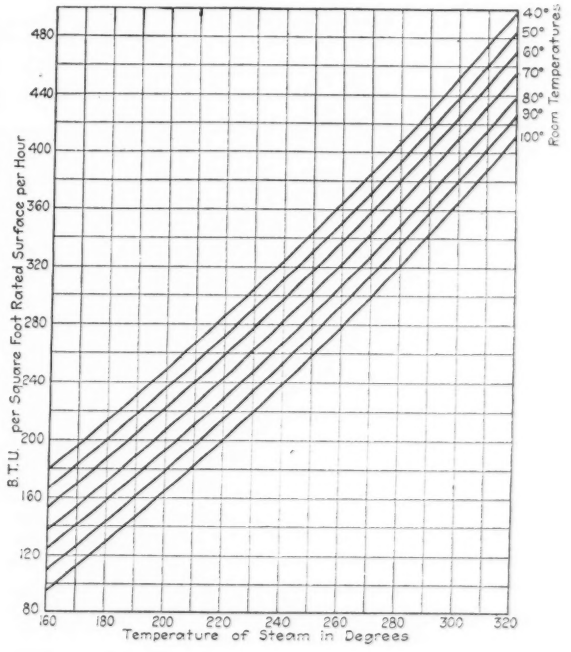


Fig. 4. Heat Transmission for Various Temperatures of Steam in Radiator and Air in the Room.

hospital type of radiator is usually spaced ½ inch more than the standard type, so the hospital type may roughly be assumed to give off from 7 to 10 per cent more heat than the standard type.

Effect of Changing Steam and Air Temperatures.

The effect of changing the steam temperature on the inside of a radiator or the air temperature on the outside of a radiator has a very appreciable effect upon the heat transmission. The changing of the difference in temperature between the steam and air on the two sides of the radiator

varies the transmission appreciably on account of the fact that the radiant heat transmitted varies as the fourth power of the temperature. Table 4 and Fig. 4 show the heat transmission for a two-column, 38-inch radiator 10 sections long at different steam and room temperatures. This table and figure have been obtained from actual experiment. It will be noted in looking at the plate that increasing the steam temperature increases the heat transmission more rapidly than reducing the room temperature.

Table 4. Heat Transmission for Various Temperatures of Steam in Radiator and Air in the Room.

Temperature	Temperature of Air in Room						
of Steam	40	50	60	70	80	90	100
160	180	166.4	153.2	138.43	124.2	109.7	94.8
180	213	199.4	186.3	171.40	157.2	142.7	127.8
200	250	236.0	223.2	208.1	194.0	179.6	164.7
220	286.8	273.0	260.1	245.1	231.0	216.5	201.6
240	324.2	311.0	298.5	284.0	269.4	254.9	240.0
260	364.0	351.4	338.3	323.4	309.2	294.7	279.8
280	407.4	393.8	380.0	365.8	351.6	337.1	322.3
300	451.4	437.8	424.7	409.8	395.8	381.1	366.2

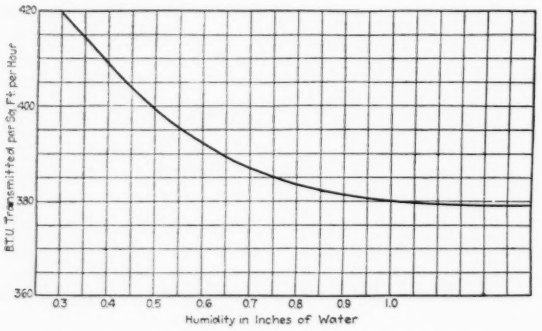


Fig. 5. Effect of Humidity on Heat Transmission.

Effect of Humidity.

Figure No. 5 shows the effect of increasing the humidity upon the heat transmission. It will be noted that with extreme change of humidity there is a slight change in the heat transmission, the heat transmission reducing slightly as the humidity increases. Humidity can have very little, if any effect upon radiation, and the effect of humidity must therefore change the convected heat lost by the radiator. This change of convected heat is probably due to the change in the density of the air passing over the radiator.

Effect of Air Circulation.

The amount of heat given off by a radiator may also be increased by increasing the velocity of the air over the surface of the radiator. This increase in velocity will increase the amount of heat carried off by convection. No exact data are available on the effects that may be introduced by increasing these velocities over radiator surfaces, but in rooms with moving machinery the heat transmission is increased approximately 10 per cent.

Effect of Painting.

The effect of painting was originally determined by experiments made with a cast iron rectangle, and in applying these to radiators of standard type, corrections must be made to allow for the difference between the area of the radiating and convecting surfaces. The effect of painting is to change the radiation constant of the radiating surface and has practically no effect upon the heat lost by convection. It is, therefore, a surface effect and it makes no difference what paints are placed on the radiator as a priming coat, the results are always dependent upon the last coat of paint put upon the radiator. In radiators having a large proportion of radiating surface such as pipe coils or wall coils, the effect of painting will be more marked than in four-column radiators having a comparatively small radiating surface in proportion to convecting surface. All finely ground materials have about the same radiation constant. Therefore all paints having finely ground pigments will give about the same effect. Metals have a poor radiating effect so that any paint involving flake metal, such as the bronze, will have a low radiating constant. The following Table shows the heat loss from a two-column, 38-inch radiator, 10 sections long, when painted with different kinds of paints:

Effect of Painting on Two-column 38 Inch Radiator, Steam Temperature 215 deg. Room Temperature 70 deg. Fahr.

Condition of Surface	Per cent
Cast iron bare	240
Painted with aluminium bronze	200
Painted with gold bronze	205
Painted with white enamel	242
Painted with maroon japan	240
Painted with white zinc paint	242
Painted with no-lustre green enamel	230

(To be Continued.)

IOWA PLUMBING CONCERN ADVERTISES ELECTRIC TABLE LAMPS.

Many plumbing and heating establishments throughout the country also operate electric lighting departments and find them profitable. They not only undertake house wiring contracts but also do a large volume of business in all kinds of accessories and electrical appliances. Where such shops have a complete stock, the sale of lamps plays no little part in making the store very attractive and thereby draw trade. The King Plumbing Co., of Keokuk, Iowa, sells electric table lamps and advertises that they make charming gifts. Mr. King was president of the Iowa Master Plumbers' Association a few years ago and has a progressive establishment in Keokuk. The accompanying advertisement, clipped from one of his local newspapers, shows how this company reaches the bulk of the

Electric Table Lamps
Make Charming Gifts
By day or by night an artistic electric lamp will be a constant pleasure — a continual reminder of the giver.
Here you will find lamps which combine beauty with that prime requirement of a good lamp, proper illumination.
Our complete stock of table and floor lamps affords you an opportunity to select according to your own and the recipient's taste—and with due consideration for your pocketbook.
An early visit assures you of a wider choice.
King Plumbing Co.
Keokuk Iowa

people. The advertisement is attractively illustrated and worded in such a way that prospective customers will have confidence that the company can serve them satisfactorily as regards quality and price. The sale of specialties means not only profitable transactions, but paves the way to sales in other departments.

You Can Help Answer These Questions.

What grade of soil pipe do you recommend? What is the lightest gauge of brass tubing that should be used on a job? What should be the minimum size of water supply? How many types of water closets should be manufactured? These are a few of the matters before the National Bureau of Standardization of Plumbing Materials. You can help the Bureau by sending your suggestions at once.

Shop Shorts, No. 12.—Gas water heaters are a profitable specialty to handle, and the time to start pushing them hard is when furnace fires are out, and that will be soon.

QUICK TURNOVERS *of* CAPITAL

When Is It Profitable?

By Edwin L. Seabrook

"WHAT should be my capital 'turnover' during the year?" inquires a master plumber. Stated in other words, his problem is: "How much business ought I do on my capital?" We all remember, before the war, the slogan, "Quick sales and small profits," which was used to push so many sales drives. This was only another way of stating the "turnover" problem. Quick sales are coming nowadays without the drive; nevertheless, there must be maintained a certain relation between capital invested and the volume of business. Probably this relationship has not changed since the war began, but, due to higher costs of everything, more capital is required. A master plumber employing the same number of mechanics as before the war must have greatly increased capital, or make his "turnover" many times greater.

Personal Equation a Factor.

How much business ought to be done on a given amount of capital, or what the "turnover" should be, is a question no one can answer, in a general way, to fit each individual case. There are many factors involved, and in the last analysis we come to the personal equation of the owner himself. Some men can manage a small business profitably, but would fail to make money with a large one. There are many small businesses that make a much larger profit proportionally than large ones. On the other hand there are men who must handle big things to be at their best. They would be just as much a misfit in a small business as a little capacity man would be at the head of a big concern.

Turnover and Expansion Linked Together.

In considering how many times the "turnover" ought to be, there are several features connected with it that are well to bear in mind. The "turnover" and expansion are linked together. No one wants to stand still. It is a most natural ambition to expand and grow bigger every year. Now expansion may be profitable or unprofitable. Many firms catering to the expansion ambition have bursted in the attempt; others have crippled themselves. A business should not expand or grow faster than the ability to handle it develops in the management.

It is possible for a business to over expand, grow faster than the finances, equipment, mental and business ability can take care of it. The greater the "turnover" the more need for watchfulness and increased managing ability. Increased "turnover" will be profitable only as the growth is solid, substantial and fits in perfectly with all other controlling factors.

Expansion May Be Unprofitable.

Increasing the "turnover" is generally done, primarily, to increase the profits. This does not necessarily follow. It is possible to increase the volume and reduce the earnings. The records of a firm in a Western city, engaged in a branch of the building trade, will very forcibly illustrate that expansion may be unprofitable.

One year this firm did a business of $53,000 and made a profit of over 9 per cent, or about $4,900. The management was seized with the quick "turnover," rapid expansion idea. The next year the volume reached $71,000 and a profit of 5⅓ per cent, or about $3,800. The next year the volume went up to $129,000, with a profit of a little less than 8 per cent, or nearly $10,000.

Now, in this city there were five other firms in the same line. The expansion of the firm with the rapid "turnover" fever was out of all proportion to the natural increase or growth of business in the community. The volume of business of the other five firms began to contract. They counteracted by cutting prices. The expanding firm, to hold its own, had to meet price-cutting competition, all being more or less in the contracting line where price was the controlling factor in closing a contract.

The business of the expanding firm for the fourth year was $98,000, and made a profit of $1,800—less than 2 per cent. This was getting near the danger line. The fifth year's business was $83,000, and the profit $2,200. The business of the sixth year was over $70,000, and made a profit of $3,000, or a little over 4 per cent. The average profit during the five years of experimental expansion was $4,150. This was 18 per cent less than the year before the attempt at expansion. How hard it was to get back to the standard of the 9 per cent profit year need not be told. The business was demoralized for it and its competitors. This shows that expansion is not profitable, if it must be done at the expense of someone else who is fully competent to handle and contend for his share. When expansion or the attempt at quick "turnovers" goes beyond the natural growth of business in the community, barring new developing lines, it will be at the expense of something or somebody.

Overhead Has Increased.

The expansion illustrated above was undertaken on the theory that a large business could be taken on a small margin, thus reducing the expense. The larger the business, the smaller the expense, the greater the profit. This brings to the front the vital factor in the "turnover" problem—*overhead expense.* This factor has gone along with everything else in the upward swing of prices. Expanding the business by quick "turnovers" does not decrease the cost of the overhead. It may lessen the percentage on the volume. It is here that many deceive themselves. They figure that doubling the volume cuts the overhead in two; and that, therefore, certain portions of the business need carry no overhead. Grant, for the sake of argument, that a business can be expanded from $50,000 to $100,000 with no increase in overhead, if it can not be kept on that basis, is it wise to make one-half of the business carry the entire overhead?

Added Lines That Didn't Pay.

A hardware concern in a certain city was offered a year's contract for an article used by a big public utility company in its home city on the buying cost plus 7½ per cent basis. It jumped at the offer. It figured this was all velvet; there was no cost in handling it. Shortly afterward a cost system was installed. When this particular contract passed through the system, it showed a loss, and was cancelled.

A Boston firm was doing one line of building work, and decided to add another. Here is what they told the writer: "We shall regard the new line as a "by-product," and it will go in the estimtae at cost. The old line will bear all the expense." The firm reasoned that by taking on two lines, putting one in at cost, they could make that win the profitable one for them.

Nearly everyone will admit that the reasoning of the Boston firm was entirely wrong, that it is the worst kind of fallacy

to make one part of the business carry the entire expense burden. But is it any more so than that of the firm taking the utility contract? Was the fallacy any worse because there were two lines instead of one? Is it any different from taking on some contracts in the whole line without adding anything for overhead?

Overhead Cannot Be Ignored.

Is a master plumber, handling one hundred contracts in a year, any better off because he executed a third of them merely for increased volume of business? The question of "turnover" of capital, and overhead expense are so closely bound together that the latter cannot be disregarded in any attempt to increase the former. It is very seldom that business volume can be increased to any extent without increasing the expense of carrying the business.

If a master plumber feels that he wants to, or must, take some "no overhead expense" contracts or business, let him be honest with himself about the matter. Make a ledger account for such work; head it "No Profit," "No Overhead," or anything he chooses, to distinguish it from his other business. At the end of the year when he compiles his overhead expense, eliminate this from the regular volume upon which the overhead is computed.

Directly answering the question as to the "turnover" of capital, I can only suggest the same answer that Mark Sullivan gave in "Collier's Weekly" to the inquiry "How long will prices continue to go up?" The answer was: "Just as long as things can be made and sold at a profit." The master plumber should do as much business on his capital, make as many "turnovers" as are profitable, and no more. Profit, therefore, becomes the deciding factor in volume and "turnovers." What these should be is a matter for individual decision.

Take this as a guide: Business expansion is profitable only when all other factors expand accordingly—ability to manage, equipment, finance, expense, profit.

NEW YORK PLUMBER USES NOVEL ADVERTISING STUNT.

E. L. Longyear, a progressive plumbing and heating contractor of Kingston, N. Y., has a novel way of developing business. He sends out monthly calendars, and attached to each calendar is a return postal card. On the face of the card, where the stamp is to be attached, are the words "Postage Well Spent." Then, on the back, are places for the customer to mark whether he is interested in plumbing, heating or lighting equipment, followed by three lines for the name, address and town of the customer. A pretty picture printed in colors hangs above the calendar, and beneath it is this message from Mr. Longyear:

"The Vitals Of Your Home."

"What are they but the plants for heating, lighting and water? When they get out of order, everything is out of order, and your household affairs are held up.

"This is a month (March) of internal troubles for houses. Don't wait until things really get bad. Remember the 'ounce of prevention' truism. Call in the house doctor, the plumber—that's us—and let us give the patient a thorough examination.

"Maybe nothing is wrong—maybe we can suggest some ways of avoiding future trouble—maybe we can nip a danger in the bud somewhere. Every way you stand to gain."

This is, indeed, clever advertising, and "Domestic Engineering" has every confidence that Mr. Longyear has been rewarded. Reaching a selected list of customers in this novel way once a month cannot help but promote profitable business.

When in doubt, ask "Domestic Engineering."

PHILADELPHIA CONTRACTORS USE LOCAL NEWSPAPERS TO URGE GREATER PRODUCTION AND RETURN TO 9-HOUR DAY.

Through the medium of newspaper advertising, the Building Trades Employers' Association of Philadelphia and Vicinity, which includes many prominent plumbing and heating contractors, is carrying on propaganda to bring about increased production and a return to a 9-hour day. The accompanying advertisement measured 8 inches wide and 10 inches high and was run in one morning paper and two evening papers recently. The association is not three months old, but is leading the way in regard to publicity, suggesting to all concerned that the methods suggested will result in reducing the high cost of building. Secretary Edwin L. Seabrook, who writes from headquarters at 11 South 16th Street, Philadelphia, suggests that if every other association interested in building construction would take a like attitude and action, it would have a marked influence in counteracting the demand for increased wages and shortening the hours of labor. The advertisement speaks for itself, and the Philadelphia association is to be commended for its progressiveness and aggressiveness at a time when only whole-hearted co-operation can bring about reforms, the adoption of which will be beneficial all around.

By Increasing Production You Reduce the High Cost of Building

The Building Trades Employers' Association of Philadelphia and vicinity, organized to secure better work and greater production of buildings in and around Philadelphia, submits for public consideration the following suggestions:

To offset an admitted deficiency in the number of skilled workmen engaged in the building trades, we suggest that, beginning May 1st and ending October 31st, 1920, the working hours be increased from eight hours to nine hours per day *with a corresponding increase in pay.*

This will increase the amount of work done, which will be very desirable from the public point of view; and it will give the workmen a considerable increase in their wages, which will help them in meeting the present high cost of living.

It is generally agreed that increased production is absolutely necessary if the high cost of living is to be checked.

We ask the support of the public, the builders, the sub-contractors and all workmen, whether union or non-union, in this matter, which is proposed in the interest of all of us.

Building Trades Employers' Association of Philadelphia and Vicinity

Offices : 11 South 16th Street, Philadelphia

This association includes the sub-contractors and material men engaged in the construction of buildings. It is ready to welcome to its membership any reputable concern engaged in any branch of building construction or in manufacturing or supplying materials for same.

Should Certain Size Kitchen Sinks Be Eliminated?

The National Bureau of Standardization of Plumbing Materials recommends that many sizes of kitchen sinks might well be eliminated, and that three sizes might be agreed on, subject to the approval and adoption by the conference. What do you think about this, Mr. Master Plumber? The Bureau would like to get your ideas right away.

From JOURNEYMAN *to* PROSPEROUS CONTRACTOR *on the* POLICY *of* DOING EVERY JOB WELL

Keeping of Accurate Accounts and Getting Fair Profit Also Contribute to Success

By H. P. Termansen

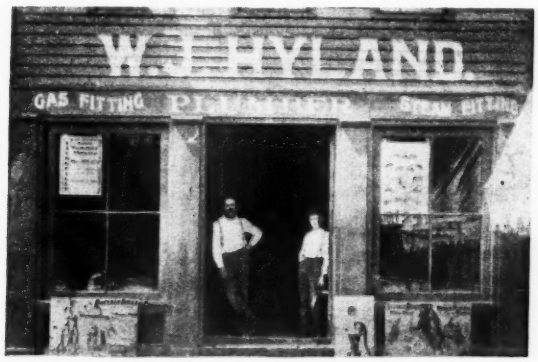
"DO it well, or not at all" is an old, old saying that practically everyone has heard time and again. The average man admits it is a sensible, pithy epigram and lets it go at that, but some men have taken it seriously and applied it to their work or business. Walter J. Hyland, of Madison, Wis., used this slogan as a journeyman and today is a prosperous contractor with several large contracts on hand, even during the dull season.

The writer walked into Mr. Hyland's shop recently and found a well arranged, modern showroom, office and workshop that seemed to give the impression that there was no dull season here. And the reason that there is no dull season for this plumber in a city that is chiefly a residence and university center dates back over twenty years to the time when Mr. Hyland started as a journeyman plumber.

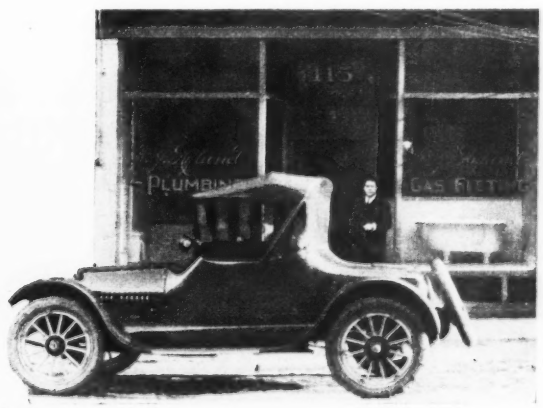
"I made up my mind," said Mr. Hyland, "that I would do an honest day's work and do every job well that I was sent out on. It certainly paid me to follow that policy, for when finally I had learned the business thoroughly and saved enough to start out for myself, I had no difficulty getting business. Wherever I had done work as a journeyman, I was pretty certain to get first consideration as a contractor.

"In contracting, however, there are other things to be considered besides having the work well done, and one of the most important of these things is a fair price, and fair prices mean the keeping of accurate accounts of both time and material. If through error a lot of time and material is charged to a job, that is, of course, where it is not a contract job, it is very difficult to convince the man having the work done that you are not trying to cheat him. An accurate account is absolutely necessary even though an itemized bill is not rendered. On all work not contract work, I used to render a carefully itemized statement, but although such a record is still kept for every job, I do not always list the items separately on the bill, for many of my customers are like the man I sent a statement to last week for $4,200 on which was carefully listed every hour and piece of material down to the smallest nipple. When I met the man on the street the next day, he said, "What do I know about T's, nipples, traps, or the like? Send me a bill for 'Plumbing—$4,200.' and I will write you a check for it." There are others again who insist on having every little detail on the bill.

"But, at the same time, on many of the small repair jobs, it is well to study your customer a bit and use a little diplomacy. For instance, there are a number of people here to whom I never send a bill for little repair jobs, like stopping a leak, etc., showing the amount of time charged, for they keep a record of the time the plumber arrives on the job and the time he leaves and would refuse to pay for any of the time required to go from the shop to the job and back. I just send them a bill for $5, or whatever it is, for fixing leak in bathroom, or the like. Of course, I keep a careful record here and try to be absolutely fair. A short time ago I sent a man out to Fair Oaks, which is a couple of miles from here, to do two small repair jobs, and I split the time for getting to and from the jobs—which were within a couple of houses of each other and of the same nature—between them. The lady of the house at the second stop asked for an itemized bill and refused to pay for any of the time other than that actually spent at her place, as she noticed that the plumber



The Shop of W. J. Hyland Twenty Years Ago.



W. J. Hyland's Establishment as It Looks Today.

came out of a house two doors away. When she sent me a check for $1.90, which did not include any time but the time spent on her job, I returned it with the statement that if her neighbors had to pay for part of her plumbing work, I would stand for the rest. A few days later her sister came in and paid the bill I sent in the first place.

"Jobbing, however, is a very small part of my business, and during the last few years particularly, I have been too busy on large contracts to attend to job work. And here is where I received the biggest returns on the policy of doing a job

A Fine Job Secured by Mr. Hyland Without Competition.

well and being fair and accurate as to prices, for I did not have to bid on any of the big jobs that I am working on at the present time. I am just finishing the plumbing in the Fuller & Johnson factory extension, which I started the first of last November. The bill for that will be about $10,000. At this factory other extensions are contemplated for the near future and, therefore, I put in a 15-in. main drain to take care of the additional load of later extensions. The Fuller & Johnson buildings have saw tooth roofs and require thirty-one 6-in. down spouts. Each building has 110 plumbing fixtures and 1,500 ft. of pipe in 50 sections. The saw tooth construction permits sunlight for both floors of the two-story building. I am also working on a big addition to the Gisholt plant, and soon my men will start work on the new Burgess Battery Co. building, which will require over $10,000 worth of plumbing. On neither of these jobs was I asked to put in a bid. I was simply told to take care of the plumbing end of it and went ahead.

"Do each job well, keep accurate accounts, and ask a fair profit is a good policy to follow."

NEWS OF THE WORLD.

R. P. Skinner, American consul general at London, has notified the State Department that in view of rapid fall in value of paper and silver currency of Great Britain, and in order to safeguard the treasury of the United States against any loss resulting therefrom, he has, after consultation with bankers, decided that it is very necessary to change the rate of exchange at which fees have been collected during the past month and to establish a new rate as from February 1, 1920, of 6 shillings to the dollar, which will be equivalent to $3.33⅓ to the pound.

According to the report of the Canadian Department of Immigration, immigration into Canada from the United States fell off 43 per cent during the last fiscal year. Last year 40,715 Americans settled in Canada against 71,314 the preceding year.

The Journal of Commerce announces that returns indicate that 945 new enterprises were incorporated under the laws of the principal states in February, with authorized capital of $1,158,861,000, compared with a total of $323,635,000 in the same period a year ago when less than 500 companies were organized.

Mark Sheldon, high commissioner in the United States for Australia, stated in New York last week that Australia needs people not capital. He stated that Australia has a population of about 5,000,000 and that employment could be provided over night for another 10,000,000.

Wall Street Journal states that there is consideration in some quarters of likelihood of big changes in the automobile industry. It is pointed out that stabilization in this field might well be undertaken as part of the program of reconstruction, and to obviate the possibility of a recurrence of conditions which threatened the industry some years ago.

Governor McCarthy, of Hawaii, has told the Senate Immigration Committee that the Japanese population of Hawaii has increased from a handful thirty years ago to 120,000 persons. He asked that Congress co-operate in Americanizing the alien population of the islands, declaring that Orientals constitute more than 50 per cent of the total.

Herbert Hoover, in an address before the Western Society of Engineers, at Chicago, said the development of agriculture to keep pace with the development of industry is one of the greatest reconstruction problems facing the country. Industries are drawing workers from farms, he pointed out, and if we should develop our exports of industries during the next five years as rapidly as during the last five years we shall by that time be faced with the necessity of importing foodstuffs.

The Federal Reserve Board has issued a review of the general business and financial conditions throughout the several Federal Reserve Districts during the month of February, stating that while the Federal Reserve agents in their reports as to business conditions and the outlook for trade forecast the continuance of an active demand for products, the situation in some districts is such as to raise questions and to lead to predictions of possible reduction in business activity and in prosperity. No increase in labor unrest is observable, but in some districts a continuation of underproduction or limitation of production is encountered.

The Associated Press reports that Soviet Russia pledges the establishment of democratic principles in Russia and the calling of a Constituent Assembly. It promises further to withdraw the decree annulling Russia's foreign debt, restoring 60 per cent of liability, and also to pay arrears of interest, giving as a guarantee for fulfillment of its obligations considerable mining concessions of platinum and silver to an Anglo-American syndicate. In return and in addition to the formal peace treaties the Soviet government would require Great Britain and other countries to abandon all intervention in Russian affairs. It also proposes the United States allow a credit to Russia conditioned upon considerable concession to that country.

The Children's Bureau has issued a report entitled, "Children's Year: Looking Backward and Forward." The report states that permanent measures for child welfare have resulted from efforts of the 11,000,000 women in about 18,000 communities all over the country who took part in the Children's Year campaign inaugurated by the Children's Bureau in 1918. In thirty-eight states the Children's Year Child Welfare Committees have planned to continue the work with co-operation of the Children's Bureau; in thirty states Child Hygiene Divisions have been established; and in sixteen states Child Welfare Commissions have been appointed.

Otto Praeger, second assistant postmaster general, stated in New York, March 2nd, that aerial mail service is not costing the public one cent but is saving the people more than $100,000 a year. He said it costs less than $400,000 a year to operate a 1,500-pound mail capacity airplane one round trip daily between New York and Chicago, and with such a schedule nearly $500,000 worth of railroad space and clerical hire has been saved.

QUESTIONS & ANSWERS

HOW HORIZONTAL RANGE BOILER WAS HEATED BY INSERTING A STEAM TUBE.

Editor "Domestic Engineering":—In reference to the question and answer on Page 89 of the January 31st issue, I am sending herewith a sketch of a hot water tank I installed one Saturday morning in a small restaurant. The coil in the old tank sprung a leak, and there were no tanks to be had with a steam coil this side of Chicago. Hot water was necessary, so it was up to me. Fig. 1 shows how it was done. The tank has been in for seven weeks and supplies plenty of hot water for the restaurant and one flat above. I hope this idea is of value and worth publishing.

Davenport, Iowa. "H."

Comment:—The boiler shown in Fig. 1 is a horizontal range boiler with two control end tappings, and two tappings at top and two at bottom of shell. One bottom tapping is used for cold water inlet. The other is for a drain

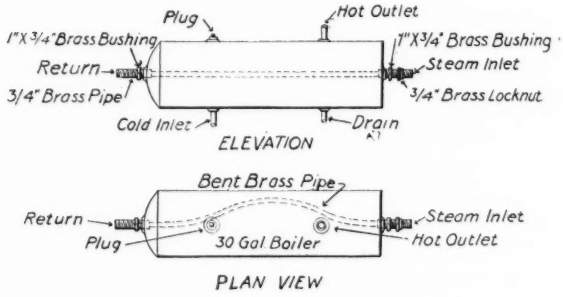


Fig. 1.

or sediment pipe. One top tapping is plugged, the other is the regular hot water outlet and is piped up to the fixtures.

The pipe running through center of boiler is ¾-inch brass pipe. It has a long thread cut on both ends. A 1-by-¾-inch brass bushing is screwed into each end outlet. Then bushings are both threaded clear through with a ¾-inch plug top so that the bushings will run down over the long threads.

A bushing is first screwed on one end of the tube tightly. Then the tube is slipped through the boiler and this bushing screwed up tight in end of boiler. That makes one end tight. The long thread now sticks through the other end of boiler. The other bushing is then screwed on this long thread and is run up till it faces against the boiler end. Then it is carefully entered into the one-inch while being screwed still more over the ¾-inch long thread. As soon as it has caught in the one-inch thread it is screwed home in the usual way.

Then a gasket is slipped over each long thread close to the "hex" of the bushing, and the lock nuts which also are brass are then run over the long threads and screwed up tightly.

This now leaves both ends perfectly water-tight. The steam and return pipes are then connected to the ends of the long threads in the usual way.

It is advisable to have the return end of tube, say, one-half inch or more lower than the inlet end so as to ensure perfect drainage of the condensate. Expansion is taken up by the bend in the steam tube.

REMEDY FOR OVERHEATED AND LEAKY DOMESTIC HOT WATER SUPPLY.

Editor "Domestic Engineering":—I have been reading your valuable magazine for several years and like it very much. Am young at the trade and would like to ask two questions through your pages.

I connected a 30-gallon copper heater with a C. I. water front and connected them together with ½-inch I. P. S. brass pipe. The supply comes from the cellar to the boiler and the hot water from the boiler goes to the ceiling and up to the bathroom, and the cold goes right above it.

One trouble is that the water heats too fast, and I would like to know if there is any way to cut it down.

I also have a lot of trouble with leaks in the hot water pipe above the boiler on the hot line, but have not had any on the cold lines. And have had some on the range connections themselves.

Sometimes, when the faucet is opened, nearly all is steam instead of hot water. I am a little afraid of it, having fixed the hot line about three times. The heater does not make any noise.

Please tell me what causes the leaks. The threads seem to be perfect. What would you do in a case like this?

Mass. Y. H.

It is quite apparent that the water-back heats the water faster than is required in this particular case. We would remedy the trouble by replacing the present 30-gallon boiler with a larger one, say 50 gallon, and would see that there is a chance for air to circulate around the boiler to cool it down. Or, we would hang a fire brick over the face, or part of the face of the water back to reduce the amount of heat imparted to the water back by the fire. Either arrangement should effect a remedy. In either case we would use ¾ or 1-inch connections between boiler and water-back instead of ½-inch. We consider that too small, particularly if the flow pipe connects to side tapping of boiler.

Another remedy, providing the water front connections are O. K., is to run circulation up to the fixtures, if the bathroom is, say 20 feet or more away from the boiler.

Still another remedy for surplus heat in a range boiler is to heat a radiator or coil, say in the bathroom, from the range boiler. Such a coil will use up the surplus heat.

But the best remedy for you to use in this particular case, must be decided upon by you and the owner, as it will depend upon existing conditions, on which we are not informed.

You are young in the business you say. That's good. You have a long, useful career ahead. Now is the time for you to get a good knowledge of the theory of the business

and to develop big generous ideas worthy of our trade. Do not get the bad habit of using pipes that are too small, such as ½-inch for water-back circulation. Develop the habit of always being on the safe side. That's what the customers want. They don't want to run risks for the saving of a few cents. They want good results.

IMPROVING CONNECTIONS TO COMBINATION RANGE BOILERS.

Editor "Domestic Engineering":—Enclosed is a sketch (Fig. 1) of a job, which was installed according to the owner's idea after I had told him and insisted it would not work. I contend hot water cannot be gotten from upper tank except when it gets so hot that it backs through the cold water pipe, which it does.

Please advise me if there is any way known to you that I can tie this upper tank in so I can utilize heat of range in connection with furnace and heater in basement. Also advise how I am to connect circulating pipe to derive its benefit on the upper tank.

Nashville, Tenn. L. H.

You can draw hot water from the upper boiler if you place a stop cock on the supply to lower boiler and throttle it down

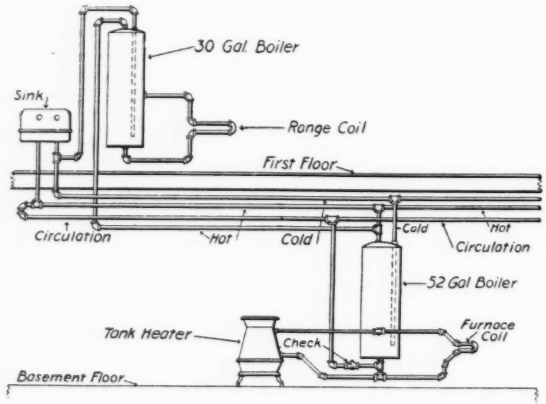


Fig. 1.

to a suitable point. Then hot water will come from both boilers. When the lower heaters are not in use, this stop should be entirely closed.

Fig. 2 shows how we would be inclined to attach stops on this job to compel hot water to be drawn from upper boiler, and to shut off lower boiler when required.

The adjusting cock is set on the hot supply from lower boiler below the branch to the sink. This has to be operated with a wrench as it has no handle. The plumber checks it down so that part of flow to fixtures comes from upper boiler. When it is correctly set, it is not disturbed again. The other cocks shown with lever handles are intended to be used for shutting down this boiler. A relief vent should be placed on one of the pipes between boiler and stops so that should both stops be closed, and the water confined in lower boiler, this boiler will not become ruptured by expansion of the water contained within it.

The stops here, of course, would never be closed, except when the tank heater and furnace coil are not in service.

Fig. 3 shows a plan which should work positively without depending on the setting or operation of any shut off valves for success.

In this sketch all hot water has to be drawn from top of upper boiler. None is drawn directly from lower boiler. The lower boiler is only a booster for the upper boiler. The cold supply goes to upper boiler only for a reason. No cold supply goes to lower boiler. All water heated in lower boiler rises by gravity to upper boiler through the circulation pipes shown.

This circulation should be free and rapid so that when the thirty gallons of hot water are drawn from upper boiler, the lower boiler will quickly fill it again with hot water.

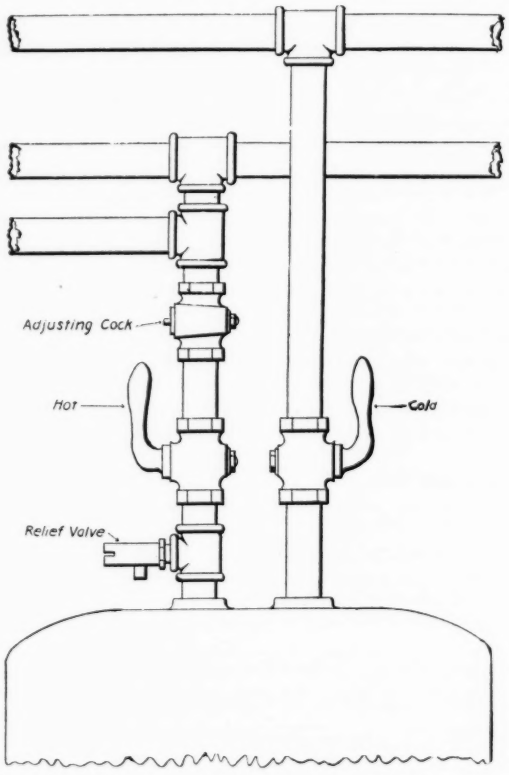


Fig. 2.

We would, of course, prefer to have the 52-gallon boiler on first floor and the 30-gallon boiler in basement. It would reduce the liability of the occupants being able to draw all the hot water out of upper boiler.

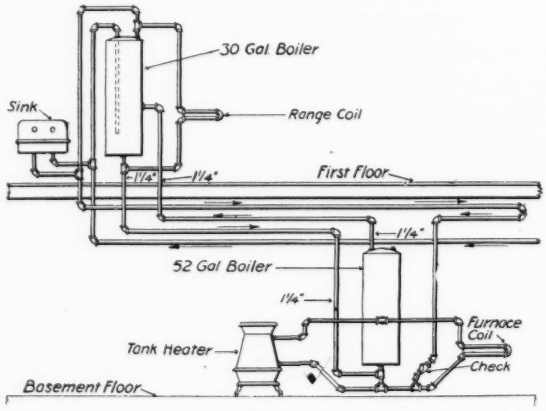


Fig. 3.

We advise changing the locations of these boilers, should Fig. 3 be adopted. We also advise increasing the sizes of the boiler circulation lines to 1¼ inch, as shown, connecting to boilers with full size short reamed nipples the full size of boiler tappings. The idea is to reduce resistance to this circulation as much as possible.

Note the circulation connection from the line to the fixtures. It connects into the return at bottom of lower boiler. A light swing check is placed on this circulation pipe on an angle. Hot water should circulate to the fixtures by this arrangement when the heater and furnace coil are in service.

When they are out of service, however, the lower boiler will remain cold, and the circulation to fixtures will very likely be dead.

The National Trade Extension Bureau

Bureau Issues Part Four of Efficiency Course.

Part four of the Efficiency Course of the National Trade Extension Bureau has been mailed to plumbing and heating contractors in all parts of the country. This booklet gives complete details of a bookkeeping system designed especially for plumbing and heating contractors, together with illustrations of all forms to be used. In getting up the system, the Bureau has had the benefit of inspecting systems from all over the country and has used the best ideas gained by this investigation. You cannot go wrong in adopting it.

The Bureau has in stock a supply of the various forms shown in the booklet, which it is prepared to sell at prices listed therein. These represent the cost to the Bureau in large quantities and are therefore cheaper than can be obtained from a small order placed with a local printer.

In arranging to install one of these system, the Bureau suggests that the following information be sent by the contractor:

How many journeymen do you employ?

How many orders do you average per month?

How many customers do you usually have on your books?

What is the amount of your annual business?

This information will enable the Bureau to determine the quantities of the various forms needed and will be in a position to quote prices for a complete system.

In order to keep down the expense of the Bureau, the terms are cash with order. This eliminates bookkeeping.

This booklet is very complete and contains 48 pages of valuable information to the plumbing and heating trade. The different forms are illustrated, and accompanying each is a careful explanation of its use. The system represents untiring work on the part of those associated with the Bureau, and the plumbing and heating contractor who now has a system which he believes is inefficient, should not hesitate in getting in touch with the Bureau, which stands ready at all times to solve his problems. Proper bookkeeping is the foremost essential in business. No matter how efficient or how skilled a man may be in his profession or how good a reputation he may have established if his bookkeeping system is inadequate and incomplete, he cannot be wholly successful.

The Bureau emphasizes the need of every plumbing and heating contractor having some competent person in charge of the books. The time of the contractor is too valuable to spend on such work when he can be utilizing his efforts in more profitable undertakings.

If you have not received the data on this and the three foregoing courses in efficiency issued by the Bureau, write The National Trade Extension Bureau, Mercantile Bank Building, Evansville, Ind. A two-cent stamp will bring you all of the information you need to place your business on a more profitable basis. The Bureau is yours, and if you want help, all you have to do is to ask for it.

Shop Shorts, No. 22.—A good-looking shop means a better looking ledger.

HANDY RADIATION RULES.

Radiation may be computed simply for purposes of estimating heating requirements, according to J. B. Slattery & Bro., Inc., Brooklyn, N. Y., if the following rule is carefully followed. It will give an inside temperature of 70 degrees when the outside temperature is zero, the company states. When estimates must be furnished on the spot handy rules like the following are desirable. The handy Slattery suggestion follows:

1. Allow for glass: 1 square foot of radiation for each 2 square feet of glass.
2. Allow for double glass: 1 square foot of radiation for each 3 square feet of glass.
3. Allow for exposed wall: 1 square foot of radiation for each 20 square feet of wall.
4. Allow for cubical contents: 1 square foot of radiation for each 200 cubic feet.

Cold walls, floors and ceilings must be figured as exposed walls.

Thin single roofs must be figured as glass.

Exceptions: Exposed thin partitions or glass exposed to a cold room should be figured as double glass, care should be taken to see that large crevices in the room especially at the top are closed.

Lunch rooms not on corners facing the south provide for exposed front only—adding 10 per cent—if facing other than south, figure all exposures, in the regular way, except that part used for cooking.—"The Gas Age."

Are You Helping To Standardize Plumbing Materials?

The various committees have been appointed by the National Bureau of Standardization of Plumbing Materials. Standardization is a step in the right direction, and the best results will come from the co-operation of every one in the field. Are you familiar with the recommendations of the Bureau? If not, turn to pages 491-2 of the December 6, 1919, issue of "Domestic Engineering." By helping the Bureau you help the industry. Send your suggestions at once.

Shop Shorts, No. 13.—Many live plumbing and heating shops have a slogan, and when it is short and easily remembered, the customer doesn't have to think twice when he wants to place business with a reliable establishment.

Shop Shorts, No. 14.—Small over-the-counter sales that only net a few cents or a few dollars profit may lead to bigger business if the customer is impressed with the fact that his trade is appreciated and is given satisfaction.

Shop Shorts, No. 15.—Comfort stations are a necessity wherever there are human beings. Is your city up-to-date in this matter, or a hundred years behind the times?

Shop Shorts, No. 16.—Whenever you undertake a plumbing or heating job that has some special features, tell your local newspapers about it. They'll be more than glad, in most cases, to run a good story. It's good business, too.

Shop Shorts, No. 17.—Changing your window display is like changing your clothes. It looks better and makes you feel better. Good appearance is never a liability.

Shop Shorts, No. 18.—Painting your motor truck a distinctive color is one of the most inexpensive advertisements and is worth ten times the cost of the paint.

Shop Shorts, No. 19.—A private office looks business-like and makes it easier to do business with customers. Meetings in the showroom are not always conducive to concentration owing to interruptions.

Shop Shorts No. 21.—No business man deliberately throws money away, but lack of a proper checking system means a constant loss of tools and materials. Don't let a fitting get out of the shop unless you know where it is going, and be sure it's charged against the job it belong to.

MICHIGAN MASTER PLUMBERS HOLD SUCCESSFUL CONVENTION *in* DETROIT

Organization Changes its Name to the Michigan State Association of Plumbing and Heating Contractors and Votes Unanimously in Favor of Open Shop

THE twenty-eighth annual convention of the Michigan State Association of Master Plumbers was held at the Hotel Tuller, Detroit, on Wednesday and Thursday, March 3rd and 4th.

Well attended meetings and much enthusiasm, coupled with interesting talks on the organization and functions, and the subject of more efficient financial control and general management as advocated by the National Trade Extension Bureau, by Secretary-Manager William J. Woolley, featured the two days' meeting.

A resolution was passed changing the name of the association to the Michigan State Association of Plumbing and Heating Contractors, and that all strictly heating contractors be eligible to membership and an effort be made to enroll them in the association, and the organization went on record by a unanimous vote as favoring the open shop.

Past National President D. H. Roberts highly commended the manner in which the convention was conducted and its splendid attendance, and declared it was the finest convention he had ever attended. The present labor situation, particularly in Cleveland, was also discussed by him.

Opening Session.

The meeting was called to order Wednesday morning by President John S. Irvine, who commented on the splendid attendance. Edward Heaf of Lansing and Harry May of Detroit were named sergeants-at-arms. Cards were then passed with the request that all members present fill them out for use as a mailing list. President N. J. Kennedy of the Detroit Association, extended a hearty welcome to the assembled conventioners. After the welcoming address had been delivered, a box of cigars, contributed by honorary member Otto A. Wurm of Detroit, was passed around.

President Irvine then appointed the following committees: Resolutions H. H. Newitt, Flint, S. H. Morgan, Detroit, O. Merrill, Saginaw, and H. Hunter, Muskegon. Credentials: H. Reed, Detroit, W. Hughes, Detroit, C. R. Wells, Battle Creek, A. Muir, Grand Rapids, W. Haken, Pontiac, and H. Bogema, Kalamazoo.

N. J. Kennedy of Detroit delivered an address, in which he emphasized that all members of the Association have come to the point where many important questions must be decided, and that they must endeavor in the future to eliminate the unsatisfactory conditions under which the trade has been obliged to labor in the past.

The following resolutions were then passed:

Resolved:

That when a contractor figures a job in another town from that in which he is located, he informs either the local or the secretary of the state association before bidding and that he comply with the rules and regulations in effect there at the time.

Resolved: That the name of the association be changed to the Michigan State Association of Plumbing and Heating Contractors; that all strictly heating contractors be eligible to membership and an effort made to enroll them in the association.

Secretary William A. Decker reported that all dues to date had been paid and that there is not a delinquent on the books. Mr. Kennedy then spoke on the subject of higher dues as a means of raising greater revenue for both the National and State Associations. He expressed the opinion that the dues should be assessed according to the amount of business a contractor does, or on the amount of his payroll. He also suggested that the incoming board of directors should make a budget and strike a rate on which the assessments are to be based.

Wednesday Afternoon Session.

The Wednesday afternoon session opened with a deliberation on the suggestion offered by Mr. Kennedy regarding higher assessments and practically all motions made coincided with his views. A flat rate of $18 was finally adopted after considerable discussion.

N. J. Kennedy, President of Detroit Master Plumbers' Association.

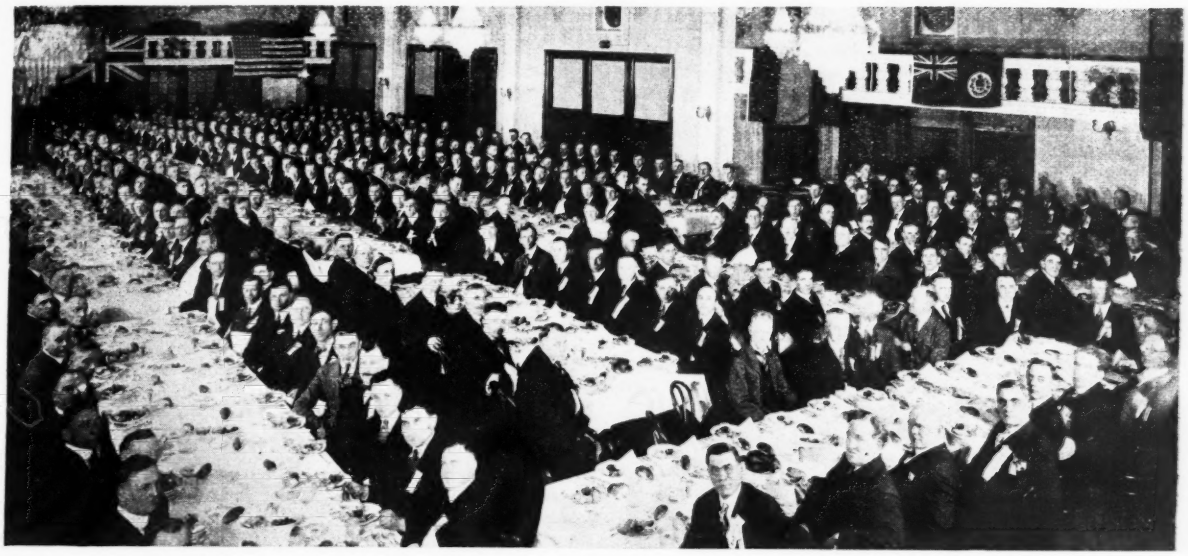
President Irvine then introduced Past National President D. H. Roberts, who represented President Frank B. Lasette, of the National Association.

A very interesting address was delivered by William J. Woolley, secretary-manager of the National Trade Extension Bureau, on the organization and functions of that body, and he urged every contractor to consider that the service is meant for his own best interests and that every contractor avail himself of that service to the fullest extent possible. Mr. Woolley also stated that the bureau has prepared a standard form of contract that absolutely protects the contractor and that will stand good in any court in the United States. It is eventually planned to take it into a court in each state for a test, he said. This contract form, he continued, has been adopted by thirty different associations. The model accounting system and the estimate forms that are supplied by the bureau were also described in detail by Mr. Woolley.

A resolution was submitted which read substantially as follows:

That the convention declare itself in favor of the open shop and that it establish a standard wage in effect throughout the state.

The resolution then was divided for consideration and after opinions and experiences had been offered by members, the association voted unanimously in favor of the open shop.



The Annual Dinner of the Michigan Master Plumbers' Association, in the Banquet Hall of Hotel Tuller, Detroit, Mich.

Banquet Held Wednesday Evening.

A banquet was held at 7:30 in the Tuller Hotel Roof Garden, and N. J. Kennedy officiated as toastmaster. Past National President D. H. Roberts, in a short talk, highly commended President Irvine on his faithful and conscientious service to the association during his term of office. William A. Decker, secretary, and James J. Keeley, president of the Jackson association, also delivered interesting addresses. Mr. O'Mara, a member of the social welfare board of the General Motors Company, emphasized the duty of the association and of each individual member to each other and to our Country. Organization in the trade, he said, is an absolute necessity. An excellent entertainment, consisting of several good singers, a clever ventriloquist, comedians, and dancers, afforded to every one present an enjoyable time until a late hour.

Thursday Morning Session.

A moving picture, entitled "Virginia's Vacation," was presented by "Domestic Engineering" at the opening of the Thursday morning session, and displayed graphically the argument for modern plumbing equipment in the home. The film received a generous applause. A resolution calling for a uniform scale of wages was defeated after much debate and a motion was finally adopted that the matter be left to the discretion of each local.

The purpose and organization of the Associated Building Employers of the city of Detroit was explained by Mr. Kennedy during the session. It was resolved that from now on the Board of Directors shall consist of the president, vice-president, secretary-treasurer and five directors, to be elected by the convention, no city to have more than one member. This was followed by the approval and adoption of the auditing committee's report.

More efficient financial control and general management was the theme of an address delivered by Mr. Woolley. This, he said, has been advocated strongly by the National Trade Extension Bureau.

Thursday Afteroon Session.

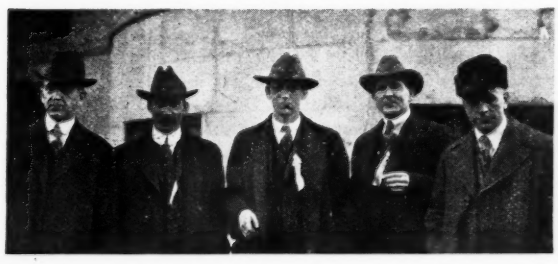
Stating that the convention was the greatest ever held in the state of Michigan, both in attendance and enthusiasm, President Irvine opened the Thursday afternoon session.

A motion was made and carried that a meeting of the association be held every four months, the power to call these meetings resting with the appointed board. Increases in the salary and office expenses of the secretary were proposed by President Kennedy and adopted by the association.

Election of Officers.

The election of officers proved that the voters were unanimously in favor of the presiding officials, with the result that John S. Irvine, Detroit, was re-elected president; James J. Keeley, Jackson, re-elected vice-president; and William A. Decker, Grand Rapids, re-elected secretary, for a term of three years. Charles L. Bigelow, Saginaw; G. C. M. Shaw, Flint; T. J. Shields, Lansing; O. H. Hankinson, Ypsilanti; and William H. Haken of Pontiac were elected to the board of directors. Mr. Decker and Mr. Kennedy were elected delegates to the National Convention with Mr. Keeley as alternate.

Jackson was chosen as the place for the next annual meeting of the association. In the concluding moments of the session Past National President D. H. Roberts delivered a talk, commenting on the attendance and the manner in which the convention was conducted, adding that it was the



The Delegation from Port Huron, Mich.—From "Domestic Engineering" Photo.

The Delegation from Flint, Mich.—From "Domestic Engineering" Photo.

finest convention in every respect he had ever attended. He also strongly endorsed the work of the National Trade Extension Bureau and discussed various points of the present labor situation, particularly in Cleveland, at the conclusion of which the convention gave him a rising vote of thanks.

Supply Men in Attendance.

Among the salesmen and manufacturers' representatives present were the following:

John J. Ormond and Samuel Milroy, of the Detroit branch of Crane Co., Chicago.

L. E. Spear, of the Humphrey Co., Kalamazoo, Mich.

P. W. Borrows and William W. Kuenz, of the Standard Sanitary Mfg. Co., Pittsburgh, Pa.

George W. Ross, Fred C. Ross, W. R. Thatcher and P. A. Gould, of the Parrott Heater Co., Detroit, Mich.

In Front Row, Left to Right: W. W. Kuenz, Standard Sanitary Mfg. Co., Pittsburgh; C. M. McSorley, L. J. Mueller Furnace Co., Milwaukee, Wis.; P. W. Borrows, Standard Sanitary Mfg. Co., Pittsburgh; D. T. Dailey, Morley Bros., Saginaw, Mich. Top Row, Left to Right: S. H. Taylor, Wolverine Foundry Co., Detroit, Mich.; Bay Jones, A. Harvey's Sons Mfg. Co., Detroit, Mich.; J. J. Ormond, Crane Co., Chicago; W. R. Thatcher, Parrott Heater Co., Detroit, Mich.; Samuel Milroy, Crane Co., Chicago.—From "Domestic Engineering" Photo.

J. H. Bacon, Jr., of the Mouat-Squires Co., Cleveland, O.

E. R. Clark, of the Hoffman Heater Co., Loraine, O.

S. H. Taylor, of the Wolverine Foundry Co., Detroit, Mich.

K. B. Hart, of the Baker Specialty & Supply Co., Logansport, Ind.

C. M. McSorley, of the L. J. Mueller Furnace Co., Detroit, Mich.

W. C. Keay, of Ruud Mfg. Co., Pittsburgh, Pa.

Bay Jones, of the A. Harvey's Sons Mfg. Co., Detroit, Mich.

D. W. Berry, of the Master Plumbers' Supply Co., Detroit, Mich.

D. J. Dailey, of Morley Bros., Saginaw, Mich.

C. K. Jacobs, of Sterling Brass Co., Cleveland, Ohio.

C. P. Weil and B. H. Herman, of the Eclipse Mfg. Co., Detroit, Mich.

Mark L. Sampliner, of the Elco Mfg. Co., Detroit, Mich.

Otto A. Wurm, of Detroit Plumbing Supply Co., Detroit, Mich.

James Degan, of the Penberthy Injector Co., Detroit, Mich.

It is announced from Washington that twenty-one states joined the Federal government March 1 in asking the Supreme court to dismiss original suit brought by Rhode Island to test the validity of the prohibition amendment to the constitution.

Obituary

William B. Clifford.

William B. Clifford, who for 48 years was associated with the L. Wolff Mfg. Co., Chicago, now the Wolff Mfg. Co., died on Thursday, March 4th. He was 71 years old, having been born in Chicago at Fulton and Peoria Street in 1849. Burial took place from his late residence, 1349 Hood Avenue, Chicago. Mr. Clifford is survived by five children.

E. Clinton Smith.

E. Clinton Smith, for half a century associated with J. L. Mott Iron Works, New York City, died suddenly at his home in Elizabeth, N. J., on Friday, February 27th, aged 67 years. He started with the company in his youth and during his long period of service was a valued member of the company's sales department.

Charles W. Welch.

Charles W. Welch, of the plumbing firm of Littlefield & Frary, at Dover, N. H., died at his home in that city on February 27th, of pneumonia. He was born in Dover in 1870. At the time of his death Mr. Welch was a member of the board of aldermen, serving his second term. He previously had served two years in the common council, was captain of a fire company and had held other city offices.

Andrew G. Paul.

Andrew Greenleaf Paul, inventor of many heating devices and appliances and often known in the trade as the "father of vacuum heating," died at his home in the Brighton section of Boston, Mass., on March 6th, after a long illness. He was 71 years of age and at the time of his death was president of the Andrew G. Paul Steam Systems Co., at 7 Water Street, Boston. Mr. Paul was born in Dover, N. H., on October 25, 1849. Later his parents moved to Newburyport, Mass., and then to Charlestown, a part of Boston. While in the latter place the young man learned the machinist's trade in the Boston & Maine R. R. shops. Later he was associated with the Fairbanks Scale Co., introducing many steam specialties for the concern. He was a member of the Masonic fraternity, a past president of the New England Chapter of the American Society of Ventilating Engineers, and prominent in church work. A widow and one son, Andrew G. Paul, Jr., survive. Mr. Paul was a relative of the poet, John Greenleaf Whittier.

T. C. Atkeson, representing National Grange, told the House Agriculture Committee on February 28th that no single group of concerns should be allowed to retain control of food prices for the entire nation, no matter how efficient their distributing service might be.

It is announced from London that the decision by the Allied Supreme Council February 27th to investigate thoroughly the prevailing high prices and the question of exchange necessitated splitting the conferees into two bodies. The council decided to investigate the exchange, scarcity of commodities, increased production, transport, the operation of "rings" charged with keeping up prices, profits and taxation as it affects prices.

The Rubber Association of America has issued its report showing importations of crude rubber into the United States for 1919. One of the most interesting features in connection with these figures is the fact that while only 7,235 tons were brought into this country in January, 1919, there was a steady increase each month, and while quantity varied, 24,675 tons were imported in December, or three times as much as during the first month.

NATIONAL BUREAU *of* STANDARDIZATION *of* PLUMBING MATERIALS APPOINTS COMMITTEES

National Association of Master Plumbers, American Society of Sanitary Engineering and All Manufacturers' and Jobbers' Organizations Represented

THOMAS F. HANLEY, secretary of the committee appointed by the National Association of Master Plumbers, announces, under date of March 2nd, that the various committees have been appointed to act on the National Bureau of Standardization of Plumbing Materials. Mr. Hanley characterizes this as a most important step in the effort to bring about the many desirable changes in the plumbing field, and it is confidently expected that before long constructive reports will be presented by the committees. The different committees are presented herewith.

The National Bureau of Standardization would like very much to receive an expression from everyone in the field—master plumber, manufacturer and jobber—relative to the recommendations made recently and which were published on pages 491-2 of the December 6, 1919, issue of "Domestic Engineering."

Mr. Hanley states further: "We are presenting this matter to all of the state conventions for consideration, and we trust that we will be able to concentrate the entire efforts of all committees and members of the Bureau, so that by the time the convention of the National Association of Master Plumbers is held in Pittsburgh next June, we will be able to submit a very interesting report.

"We have met with a great deal of success so far and we have before us many items of importance concerning the manufacturer of materials and the construction and installation of work in general."

The committees are as follows:

Officers, Directors and Committee.

President, Clarence V. Kellogg, 419 West Eighteenth Street, Chicago.

Vice-president, Jas. E. Baggot, 21 East Lake Street, Chicago.

Second vice-president, Adolph Mueller, H. Mueller Mfg. Co., Decatur, Ill.

Treasurer, J. R. Steneck, 1801 Diversey Boulevard, Chicago.

Secretary, Paul Blatchford, 139 North Clark Street, Chicago.

National Association of Master Plumbers.

Jas. E. Baggot, director, 21 East Lake Street, Chicago.

Geo. H. Drake, 218 Lexington Avenue, Buffalo, N. Y.

John H. Keane, 207 Fulton Building, Pittsburgh, Pa.

R. T. Rock, 102 South Avenue, Bridgeport, Conn.

Frederick A. Wilson, 328 Mason Street, San Francisco, Cal.

T. F. Hanley, secretary, 3444 Forest Avenue, Chicago.

American Society of Sanitary Engineering.

Wm. C. Groeniger, Director, 8 East Chestnut Street, Columbus, O.

Thos. J. Claffy, Department of Health, Chicago.

A. J. McGookin, Department of Health, Newark, N. J.

Eastern Supply Association.

Guilford R. Adams, Director, 71 Exchange Street, Rochester, N. Y.

Jas. W. Farrell, 142 North Seventh Street, Philadelphia.

H. W. Thorndike, 52 Elm Street, Boston, Mass.

Central Supply Association.

Clarence V. Kellogg, Director, 419 West Eighteenth Street, Chicago.

A. A. Merkel, Canal and Jackson Streets, Cincinnati, O.

Geo. H. Gorton, 216 Delaware Street, Kansas City, Mo.

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J. B. Murphy, Director, 332 South Michigan Avenue, Chicago.

W. B. Chamberlin, Bessemer Building, Pittsburgh, Pa.

T. R. Barnes, Barnes Mfg. Co., Mansfield, O.

Geo. D. McIlvaine, secretary, Oliver Building, Pittsburgh, Pa.

National Association of Brass Manufacturers.

W. M. Webster, Director, 139 North Clark Street, Chicago.

Adolph Mueller, H. Mueller Mfg. Co., Decatur, Ill.

E. F. Niedecken, 100 Second Street, Milwaukee, Wis.

H. W. Gillett, Bessemer Building, Pittsburgh, Pa.

Eastern Manufacturers, Inc., and Southern Soil Pipe Manufacturers.

R. R. Rust, Director, 90 West Street, New York, N. Y.

Otto Agricola, Agricola Pipe Co., Gadsden, Ala.

W. J. Kirby, Somerville Iron Works, Somerville, N. J.

Sanitary Potters' Association.

E. S. Aitken, Director, Trenton Potteries Co., Trenton, N. J.

W. B. Maddock, John Maddock & Sons, Trenton, N. J.

B. O. Tilden, Bellmark Co., Trenton, N. J.

Carbon Club.

B. O. Tilden, Director, American Sanitary Works, Trenton, N. J.

F. M. Clymer, Becker Mfg. Co., Marietta, O.

W. M. Webster, 139 North Clark Street, Chicago.

Tubular Plumbing Goods and Tank Fittings Exchange.

A. A. Ainsworth, Director, 17 Battery Place, New York, N. Y.

W. J. Frost, Frost Mfg. Co., Kenosha, Wis.

H. C. Bulkeley, American Sanitary Mfg. Co., Abingdon, Ill.

Francis Baker, George H. Tay Co., 599 Mission Street, San Francisco, Cal.

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R. R. Rust, chairman, Central Foundry Co., 90 West Street, New York.

W. J. Kirby, Somerville Iron Works, Somerville, N. J.

Otto Agricola, Agricola Pipe Co., Gadsden, Ala.

N. A. M. P.

John H. Keane, 207 Fulton Building, Pittsburgh, Pa.

Geo. H. Drake, 218 Lexington Avenue, Buffalo, N. Y.

Frederick A. Wilson, 328 Mason Street, San Francisco, Cal.

Jas. W. Farrell, E. S. A., 142 North Seventh Street, Philadelphia, Pa.

W. C. Groeniger, American Society Sanitary Engineering, 8 East Chestnut Street, Columbus, O.

George H. Gorton, C. S. A., 208 Delaware Street, Kansas City, Mo.

Francis Baker, 599 Mission Street, San Francisco, Cal.

Committee on Brass Goods.

Manufacturers.

E. F. Niedecken, chairman, Hoffmann & Billings Mfg. Co., Milwaukee, Wis.

Adolph Mueller, H. Mueller Mfg. Co., Decatur, Ill.

H. M. Gillett, Standard Sanitary Mfg. Co., Pittsburgh, Pa.

Jas. E. Baggot, 21 East Lake Street, Chicago.

Frederick A. Wilson, 328 Mason Street. San Francisco, Cal.

Thos. J. Claffy, American Society of Sanitary Engineering, Department of Health, Chicago.

Frank W. Hubbard, E. S. A., 176 Oliver Street, Boston, Mass.

Isadore Weil, C. S. A., Lake and Desplaines Streets. Chicago.

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John H. Keane, 207 Fulton Building, Pittsburgh, Pa.

R. T. Rock, 102 South Avenue, Bridgeport, Conn.

W. C. Groeniger, American Society of Sanitary Engineering, 8 East Chestnut Street, Columbus, O.

H. W. Thorndike, E. S. A., 50 Elm Street, Boston, Mass.

J. D. McGuire, C. S. A., 419 West Eighteenth Street, Chicago.

George D. McIlvaine, Oliver Building, Pittsburgh, Pa.

Manufacturers.

J. B. Murphy, Kohler Co., 332 South Michigan Avenue, Chicago.

T. R. Barnes, Barnes Mfg. Co., Mansfield, O.

W. B. Chamberlin, Standard Sanitary Mfg. Co., Pittsburgh, Pa.

Committee on Water Closets.

Manufacturers.

E. S. Aitken, chairman, Trenton Potteries Co., Trenton, N. J.

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B. O. Tilden, American Sanitary Works, Trenton, N. J.

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A. J. McGookie, Department of Health, American Society of Sanitary Engineering, Newark, N. J.

A. A. Merkel, C. S. A., Merkel Bros. Co., Cincinnati, O.

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R. J. Powers, 312 Sherman Street, Chicago.

John A. Corboy, 178 West Randolph Street, Chicago.

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J. Harvey Borton, E. S. A., 1136 Ridge Avenue, Philadelphia, Pa.

Thos. J. Claffy, American Society of Sanitary Engineering, Department of Health, Chicago.

Committee on Tubular Plumbing Goods and Tank Fittings.

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A. A. Ainsworth, chairman, Whitehall Building, New York.

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H. C. Bulkeley, American Sanitary Mfg. Co., Abingdon, Ill.

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R. T. Rock, 102 South Avenue, Bridgeport, Conn.

John A. Murray, E. S. A., 310 West Thirty-ninth Street, New York.

Geo. H. Bailey, C. S. A., Third Avenue and Ross Street, Pittsburgh, Pa.

Francis Baker, 599 Mission Street, San Francisco, Cal.

Thos. J. Claffy, American Society of Sanitary Engineering, Department of Health, Chicago.

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N. A. M. P.

George H. Drake, chairman, 218 Lexington Avenue, Buffalo, N. Y.

R. T. Rock, 102 South Avenue, Bridgeport, Conn.

Frederick A. Wilson, 328 Mason Street, San Francisco, Cal.

Manufacturers.

E. S. Aitken, Trenton Potteries Co., Trenton, N. J.

B. O. Tilden, American Sanitary Works, Trenton, N. J.

W. B. Chamberlin, Standard Sanitary Mfg. Co., Pittsburgh, Pa.

C. F. Bennett, E. S. A., Pierce, Butler & Pierce Manufacturing Corporation, 437 East 162nd Street, New York.

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A. J. McGookie, Department of Health, American Society of Sanitary Engineering, Newark, N. J.

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C. P. Hulbert, 202 Lake Street, Chicago.

Carl J. Stein, 853 State Street, Chicago.

Manufacturers.

C. D. Little, Crane Co., 836 South Michigan Avenue, Chicago.

C. L. Selkregg, Pittsburgh Valve & Fittings Co., Barberton, O.

Wm. P. F. Ayer, Walworth Mfg. Co., first and O Streets, Boston, Mass.

J. R. Steneck, Illinois Malleable Iron Co., 1801 Diversey Boulevard, Chicago.

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Joseph P. Fell, E. S. A., W. A. Case & Sons Mfg. Co., Buffalo, N. Y.

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L. O. Koven, L. O. Koven & Bros., Jersey City, N. J.

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H. W. Thorndike, E. S. A., 60 Elm Street, Boston, Mass.

E. R. Spence, C. S. A., Rundle-Spence Mfg. Co., Milwaukee, Wis.

Thos. J. Claffy, American Society Sanitary Engineering, Department of Health, Chicago.

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Manufacturers.

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W. H. Parker, United Pump & Power Co., Milwaukee, Wis.

N. A. M. P.

P. M. Murphy, 23 East Congress Street, Chicago.
Chas. W. Alcock, 128 East Twenty-second Street, Chicago.
Jos. W. Cannon, 11323 Michigan Avenue, Chicago.

G. R. Adams, E. S. A., Samuel Sloan & Co., Rochester, N. Y.
W. E. Clow, Jr., C. S. A., J. B. Clow & Sons, Chicago.
Thos. J. Claffy, American Society of Sanitary Engineering, Department of Health, Chicago.

Committee On Construction.

N. A. M. P.

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Geo. H. Drake, 218 Lexington Avenue, Buffalo, N. Y.
T. F. Hanley, 3444 Forest Avenue, Chicago.

American Society of Sanitary Engineering.

Thos J. Claffy, Department of Health, Chicago.
Wm. C. Groeniger, 8 East Chestnut Street, Columbus, O.

Jos. F. Evans, E. S. A., Wyoming Valley Supply & Mfg. Co., Wilkes-Barre, Pa.
A. B. Pierce, C. S. A., N. O. Nelson Mfg. Co., St. Louis, Mo.
Francis Baker, 599 Mission Street, San Francisco, Cal.
M. J. O'Fallon, M. J. O'Fallon Supply Co., Denver, Colo.

Committee On Finance.

E. F. Niedecken, chairman, Hoffmann & Billings Mfg. Co., Milwaukee, Wis.
Joseph F. Evans, E. S. A., Wyoming Valley Supply & Mfg. Co., Wilkes-Barre, Pa.
H. W. Thorndike, National Committee, 60 Elm Street, Boston, Mass.
J. E. Baggot, N. A. M. P., 21 East Lake Street. Chicago.
T. F. Hanley, N. A. M. P., 3444 Forest Avenue, Chicago.
Alex. B. Pierce, C. S. A., N. O. Nelson Mfg. Co., St. Louis.
Herman M. Hoelscher, Hoelscher Bros., 1311 West Division Street, Chicago.
E. I. Leighton, Leighton Supply Co., Fort Dodge, Ia.
T. R. Barnes, Barnes Mfg. Co., Mansfield, O.
W. M. Byrd, Jr., Hammond-Byrd Iron Co., Peoples Gas Building, Chicago.
W. B. Chamberlin, Standard Sanitary Mfg. Co., Pittsburgh, Pa.
W. B. Maddock, John Maddock & Sons, Trenton, N. J.
B. O. Tilden, American Sanitary Works, Trenton, N. J.
F. S. Hanley, 261 Broadway, N. Y.
Paul Blatchford, 139 North Clark Street, Chicago.

March 15 and 16, 1920.—The annual convention of the Missouri State Association of Master Plumbers, at St. Joseph, Mo., with headquarters at the Robidoux Hotel.

March 17 and 18, 1920.—The annual convention of the Kansas Master Plumbers' Association, at Wichita, Kansas.

March 17, 18 and 19, 1920.—The annual convention of the Nebraska Master Plumbers' Association, at Lincoln, Nebr., with headquarters at the Lincoln Hotel.

March 18 and 19, 1920.—Quarterly meeting of The National Association of Brass Manufacturers, in Chicago, with headquarters at Hotel La Salle.

March 19 and 20.—First gathering of South Dakota Master Plumbers, at Sioux Falls, with headquarters at the Cataract Hotel.

March 23 and 24, 1920.—The thirty-second annual convention of the New York State Association of Master Plumbers, at Binghamton, N. Y., with headquarters at the Hotel Bennett.

April 5 and 6.—The annual convention of the Massachusetts Association of Master Plumbers, at Boston.

April 7 and 8, 1920.—The annual convention of the Maine State Association of Master Plumbers, at Bangor, Me., with headquarters at the Bangor House.

April 12, 13 and 14, 1920—The annual convention of the Kentucky Master Plumbers' Association, at Louisville, Ky., with headquarters at the Watterson Hotel.

April 13, 1920.—The annual convention of the Oklahoma Master Plumbers' Association, at Muskogee, Okla.

April 19, 20 and 21, 1920.—The annual convention of the Kentucky State Association of Master Plumbers, at Louisville, Ky., with headquarters at the Williard Hotel.

May 10 and 11, 1920.—The eleventh annual convention of the National Pipe and Supplies Association, in Chicago, with headquarters at the Congress Hotel and Annex.

May 12, 13, 14 and 15, 1920.—The seventh National Foreign Trade Convention, at San Francisco, Cal.

May 18 and 19, 1920.—The annual convention of the Pennsylvania State Association of Master Plumbers, at Harrisburg, Pa., with headquarters at the Penn-Harris Hotel.

May 24, 25, 26 and 27.—Thirty-first annual convention of the Heating and Piping Contractors' National Association at Cleveland, Ohio, with headquarters at Hotel Cleveland.

May 24, 25 and 26, 1920.—The annual convention of the California State Association of Master Plumbers, at Oakland, Calif.

June 15, 16 and 17, 1920.—The thirty-eighth annual convention of the National Association of Master Plumbers, in Pittsburgh, Pa., with headquarters at the William Penn Hotel.

September 7, 8 and 9, 1920.—The annual meeting of the American Society of Sanitary Engineering, at St. Louis, Mo.

Standardization Will Feature Next Convention Of National Association Of Master Plumbers.

The third week in June in Pittsburgh is the date and place of the annual convention of the National Association of Master Plumbers. Standardization will be one of the foremost matters up for discussion. The National Bureau of Standardization has appointed its various committees and a report will be delivered before the convention. Are you planning to help make this report a good one? If you will do your part, the work of the Bureau will be easier and quicker. Turn to pages 491-2 of the December 6, 1919, issue of "Domestic Engineering" and analyze the recommendations of the Bureau.

Internal Revenue officials expect collection of at least $1,000,000,000 additional income and war profit taxes to result from audit of consolidated tax returns of affiliated corporations.

Canada has adopted an Order in Council providing that no immigrant from foreign contiguous territory shall be permitted to enter unless he has, over and above his transportation charges, $250 in money. This is due to unemployment in Canada.

The Senate Finance Committee has reported favorably on two House tariff measures designed to protect industries which grew up with the war. The first fixes high duties on optical glass, laboratory apparatus, surgical instruments and glass and porcelain articles for laboratory use, while the second affects magnesite.

Fig. C

Better Traps for Better Drainage Service

7

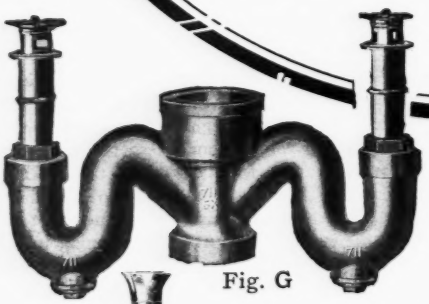


Fig. G

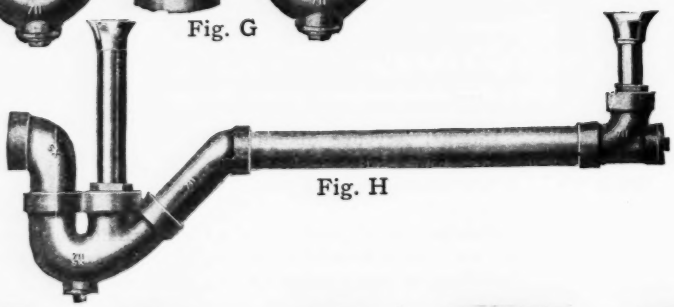


Fig. H

ESSEX F

Fig. D

Fig. E

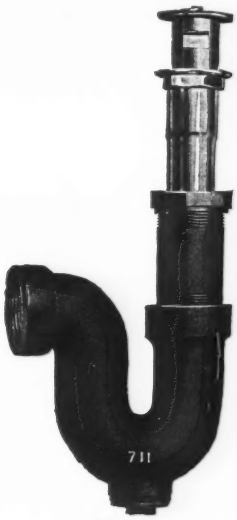


Fig. B

THE demand and usage of the 711 Cast Iron Trap is growing by leaps and bounds daily.

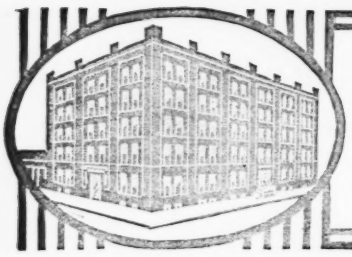
Why?

Because it is the trap that *serves better,* because it is the trap that most exactly meets the requirements of those who know what good, serviceable and practical traps are.

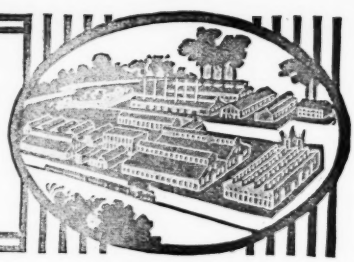
We have issued a new booklet that illustrates and describes the entire line of 711 traps—including our new "G" and "H" Lavatory Traps. Write for this booklet today.

UNDRY

NEWARK, N.J.



Among the Wholesalers and Manufacturers



COMPANIES RECENTLY INCORPORATED.

The National Pipe & Supply Co. has been incorporated in Haverford, Pa., with a capital stock of $1,000,000 by Frank A. Cabeen, Jr., and associates, to manufacture iron pipe, fittings, etc.

The Sanitary Equipment & Construction Co., Wilmington, N. C., has been incorporated with a capital stock of $100,000 by G. W. Gillette, C. R. Humphreys and Clyde Harine, to manufacture septic tanks, metal specialties, etc.

WALLACE L. PIERCE CALLED BY DEATH.

Wallace L. Pierce, president of the Walworth Manufacturing Co., Boston, Mass., from 1896 to 1913, and since that time chairman of the board of directors of the corporation, died at his home in Boston on Friday, March 5th. Mr. Pierce was born in Boston March 15, 1853, and was also head of the firm of S. S. Pierce Co., importers and grocers, established by his father and with which he had been connected since 1874.

OPENS NEW DISTRICT SALES OFFICE.

The Sloan Valve Co., of Chicago, has just opened a new district sales office at 11-13 Steuben Street, Albany, N. Y., in charge of H. B. Kimmey.

DOLE VALVE CO. ERECTING NEW PLANT.

The Dole Valve Co., Chicago, has awarded contracts for the erection of a two-story plant, 100x123 ft., at 1923-1933 Carroll Avenue, Chicago, which will cost about $90,000, and will be devoted to the manufacture of radiators and valves.

APPOINTED SALES AGENTS FOR MICHIGAN.

The Hoffman Heater Co., of Lorain, O., has recently appointed the Clark & Johnson Co., 24 John R. Street, Detroit, Mich., sales agents for its products for the entire state of Michigan.

DELCO-LIGHT IS NOW PART OF GENERAL MOTORS CORPORATION.

The business of manufacturing and selling Delco-Light products, heretofore conducted by the Domestic Engineering Co., of Dayton, O., has been transferred to the General Motors Corporation, and since the first of the year the new corporate name has been the Delco-Light Co.

OPENING BRANCH IN SIOUX FALLS.

The Cochran-Sargent Co., of St. Paul, Minn., anounces that it has leased warehouse space in Sioux Falls, S. D., preparatory to the establishment of a branch and distributing point for South Dakota and eventually part of Minnesota. The branch will be in charge of R. B. Montgomery, who has represented the company in South Dakota for several years, and several salesmen will travel out of Sioux Falls when the organization is effected.

BUFFALO FORGE CO. ELECTS OFFICERS.

At a recent meeting of the stockholders of the Buffalo Forge Co., Buffalo, N. Y., the following new officers were elected: President, Henry W. Wendt; vice-president and treasurer, Edgar F. Wendt; vice-president and secretary, Henry W. Wendt; vice-president and sales manager, C. A. Booth. The new directors include the above officers and H. S. Whiting.

TO BUILD A FORTY-MILLION TUBE PLANT.

The National Tube Co., of Pittsburgh, Pa., will soon start work on a large tube plant at Gary, Ind., which will cost about $40,000,000. Work on four blast furnaces will be started next week, followed by miles of tube mills, office buildings, shops and other structures.

RICHMOND RADIATOR CO.'S ANNUAL MEETING.

Richmond Radiator Co., of New York City, has just announced that the following officers were elected at the company's annual meeting: Chairman of board of directors, William Proctor; president, Franklin J. Matchette; vice-president, P. H. Seward. William Procter is a director of Procter & Gamble Co., Cincinnati, O. Franklin J. Matchette is president of the Servidor Co., New York City. Vice-President P. H. Seward will devote his entire time to the Richmond company's interests.

HUMPHREY CO. OFFICE BUILDING NEAR COMPLETION.

The new office building being erected by the Humphrey Co., Kalamazoo, Mich., is nearing completion, and in a month or so the company expects to move many of its departments into the new structure. It is four stories high and provides about 25,000 sq. ft. of floor space, adding greatly to the office facilities. The quota of sales set by the company for 1920, as compared with 1919, is at the ratio of 2½ to 1—specified in units of sales and not in dollars of volume, a record which was achieved in January of this year.

KANSAS CITY CHAPTER OF A. S. H. AND V. E. HEARS TALK ON RESEARCH WORK.

The visits being made to the western Chapters of the American Society of Heating and Ventilating Engineers by President E. V. Hill, Prof. John R. Allen, director of the Research Bureau, F. R. Still, chairman of the Research Committee, and Secretary C. W. Obert, included the Kansas City (Mo.) Chapter, which met on Friday evening, March 12th, at the University Club. Dr. Hill spoke on the needs of good air conditions and also brought a timely message from the Society. Professor Allen spoke on the progress already made and of future plans, and the needs of funds was outlined by Professor Still, who also touched on air conditioning. Secretary Obert's message concerned closer relationship between the Society and the Chapters. The subject of the evening was "Ventilation," Chairman John H.

Kitchen being assisted by G. P. Dickson, F. A. Griffin, J. G. Walsh, F. J. Sellers and Charles Hill.

TALK ON ANTI-CORROSION ENGINEERING FEATURES MARCH MEETING OF OHIO CHAPTER OF A. S. H. AND V. E.

The March meeting of the Ohio Chapter of the American Society of Heating and Ventilating Engineers was held in the rooms of the Engineering Societies on the fourteenth floor of the Statler Hotel, Cleveland, O., on Thursday evening, March 11th. A most interesting talk on "Anti-Corrosion Engineering," was delivered by F. N. Speller, metallurgical engineer of the National Tube Co., Pittsburgh, Pa., the address being accompanied by lantern slides.

BURNETT-LARSH HOLDS FOUR-DAY SALES CONVENTION.

A four-day sales convention was held last week by the Burnett-Larsh Mfg. Co., Dayton, Ohio, and one of the foremost plans adopted was that of increasing the capacity of the plant to bring about a 100 per cent increase in business in 1920. Much attention was paid to discussing sales and advertising campaigns for the year, and one of the days was spent by all representatives journeying through the factory to familiarize themselves with the manufacturing processes of the company's products. A good entertainment program was also provided and terminated with a banquet in the Miami Hotel. President C. E. Burnett presided and gave the feature address, and among the speakers were Judge Baggott, Dr. D. F. Garland and the Rev. Miles Krumbine, all of Dayton.

OFFICERS OF A. S. H. AND V. E. ADDRESS ILLINOIS CHAPTER ON RESEARCH BUREAU.

When Secretary Benjamin Nelson, of the Illinois Chapter of the American Society of Heating and Ventilating Engineers sent out his announcement of a "meeting extraordinary" on Tuesday, March 9th, he did not exaggerate one bit. A fine crowd responded to the call because of the desire to learn more about the Research Bureau and to meet personally those who are carrying on the fine work now progressing in Pittsburgh. Secretary C. W. Obert, of the Society; F. R. Still, chairman of the Research Bureau, and Prof. John R. Allen, director of the bureau, were the guests of honor, and Dr. E. V. Hill, president of the Society, was also on hand to participate in the deliberations. These gentlemen had visited the Detroit Chapter the night before, as part of an itinerary which will include Minneapolis, Kansas and St. Louis.

Following the usual good steak dinner in the Engineers' Club, the crowd adjourned to the meeting room on the floor above and Vice-President J. C. Hornung presided in the absence of President John Howatt, who was called out of the city unexpectedly.

Secretary Obert was the first of the visitors to take the floor and he expressed his pleasure on addressing the oldest chapter in the Society. He spoke of the fine progress that has been made and of the existence of eleven chapters as compared with only three or four about five years ago, this development being the outstanding feature of the Society's activities. Secretary Obert spoke about closer relationship between the chapters and the Society, and said that the constitution is now being revised to give the chapters more direct representation in the management of the Society. He then told of the plans to bring about increased revenue to carry on the work of the Society, and this will be done partly by raising the dues of active, associate and junior members and the establishment of an affiliate grade to interest the young men who are growing up in the profession. "We have been operating too close to the wind," continued Secretary Obert, "and the increasing demands necessitate a larger revenue. There should be no slackening of the forward movement."

F. R. Still was then introduced and congratulated the Chapter on the large attendance. He made a strong appeal for a more liberal contribution from Illinois for research work. He said, in part: "Michigan has responded most splendidly and that Chapter has exceeded Illinois' contribution by 32 per cent. One-third of the total contributions for this work has been given by western Chapters. A great work is being undertaken by Professor Allen, and he is organizing work for different universities. The Research Bureau is the best asset the Society could have, and the minimum sum for carrying on the work is $25,000 annually. Even this amount would be far too small were it not for the splendid facilities at our disposal at the Bureau of Mines in Pittsburgh. Money can be raised along the plan we adopted successfully in Detroit. The city can be divided into districts, and committees can be organized to get contributions. It can be successfully done in one day, and it also furnishes an opportunity to sign up new members for the Chapter."

Professor Allen then took the floor and gave his hearers an intimate view of what is being done at the Research Bureau in Pittsburgh. He spoke commendingly of government co-operation and stated that all he had to do was to ask for things and they were given freely by the different departments of the Bureau of Mines. Co-operative research work is being carried on with the universities, said Professor Allen, and these include Michigan, Minnesota, Carnegie Tech, Yale and Pennsylvania. He continued: "We have a wonderful opportunity to do something really constructive. We must know, not guess. We hope to clear up much of the guess work regarding such matters as infiltration, heat losses from building materials, etc. We must test our apparatus to be sure of being accurate. The field is unlimited, and it is our intention to take up research work on things in order of their importance." Professor Allen concluded his talk by explaining the tests conducted at the University of Minnesota to determine heat losses from radiators. This was illustrated with lantern slides. An excerpt from the paper covering this subject, which was presented before the annual meeting of the Society in New York in January, is presented elsewhere in this issue.

Dr. E. V. Hill then spoke and expressed the hope that the Illinois Chapter would raise the money expected of it to carry on the work of the Research Bureau. He said that he was impressed at the annual meeting with the fact that the Society has reached maturity. "It has come about before we realized it," he continued. "We are getting somewhere, and there is no reason why we cannot lead every engineering society in the country. Wonderful things are being undertaken in the Research Bureau, and they are really worth while. They could not be accomplished were it not for the co-operation of the Government, whose funds, combined with ours, mean an annual expenditure of approximately $60,000 for research work. It is our duty to boost for increased funds and also to get new members interested in the work under way."

H. M. Hart said that the work of the bureau for the first year has exceeded his expectations and is certainly of a constructive nature.

F. R. Still stated that standards have been fixed, and these include pipe, fittings and flanges, the Pitot tube, and the approval of the boiler code as adopted by the Society.

The meeting was then turned over to R. A. Widdicombe, chairman of the committee in charge of the subject of the evening, "Meters." Others on the committee were: J. H. Davis, F. Van Inwagen, John Boylston and A. A. Bloomfeldt. E. G. Bailey, president of the Bailey Meter Co.,

spoke for forty minutes on the introduction of meters, their economies, etc., and the subject was discussed for an hour with profit to all present.

EDUCATIONAL INDUSTRIAL MOTION PICTURES AID FRESH AIR PROPAGANDA.

The Ilg Electric Ventilating Co., Chicago, has recently completed a film entitled, "Health and Welfare Work," the story being wound around imperfect air conditions followed by scenes with corrected methods. The picture shows also the profitable welfare work conducive to better health and increased production which are possible by small educational investments required to correct unhealthful conditions. This film is being shown in theaters for the purpose of impressing on the public's mind the importance of fresh air, and is being exhibited also in schools, social centers and association meetings. The company has made no outward bold attempt to mention its name throughout the picture, except in the introductory remarks, and it believes that much good will be accomplished for the ventilation cause in general.

J. L. Peden, sales manager of the Kennedy Valve Mfg. Co., Elmira, N. Y., has just returned from a six weeks' trip, on which he visited the company's branch offices as well as important jobbing centers as far west as the Pacific Coast.

Tom Stack, manager of the Dallas (Texas) branch of the Wolff Manufacturing Co., Chicago, recently spent a few days at the company's home office.

W. D. Harris, assistant to the president of the Abram Cox Stove Co., Philadelphia, Pa., was on a business trip through the West last week and spent some time in conference with the Chicago office.

Theodore Weinshank, Indianapolis manager for the Warren Webster & Co., Camden, N. J., was a visitor to Chicago this week, the occasion being the celebration of his thirty-fifth wedding anniversary.

James Ketchum, chief engineer of the Chicago office of the Abram Cox Stove Co., Philadelphia, Pa., has returned from a successful business trip to Omaha.

Harry Verbeek, president of the Harry Verbeek Co., Chicago, is on an extended trip through the West, having reached California via the Southwestern route. He reports jobbers busy and plans to return via the Northwest.

William J. Woolley, secretary-manager of the National Trade Extension Bureau, Evansville, Ind., was the guest of honor at a meeting of the Chicago Master Plumbers' Association, held at headquarters in the Garrick Building on Friday evening, March 5th. A good crowd turned out and Mr. Woolley's talk on trade extension was cordially and enthusiastically received.

NEW CONSTRUCTION WORK.

The following are among the most important contracts recently awarded, as reported by "The American Contractor":

$3,000,000 power plant, Bridgeport, Conn.; The United Illuminating Co.

$3,000,000 mill, Lock Haven, Pa.; New York and Pennsylvania Co.

$2,000,000 plant, Kokomo, Ind.; Pittsburgh Plate Glass Co.

$2,000,000 cotton mill, Somerworth, N. H.; the Great Falls Manufacturing Co.

$1,300,000 to $1,750,000 building, Hartford, Conn.; Hartford (Conn.) Trust Co.

$800,000 theater, Dallas, Texas; Interstate Amusement Co.

$800,000 hotel, Washington, D. C.; Y. W. C. A. National Board.

$750,000 office building, New York City; Louisa McGerry.

$500,000 department store building, Omaha, Neb.; Burgess-Nash Co.

$500,000 factory building, Omaha, Neb.; M. E. Smith Co.

$475,000 public school No. 17, Elizabeth, N. J.; Board of Education.

$301,000 school, Johnson City, N. J.; Board of Education.

$300,000 business building, Washington, D. C.; Allan E. Walker Co.

$300,000 bank, Baltimore, Md.; National Exchange Bank.

$300,000 chemical laboratory, Hanover, N. H.; Dartmouth College.

$275,000 office building, St. Louis, Mo.; Boatmen's Bank Building.

$260,000 school, Napoleon, O.; Board of Education.

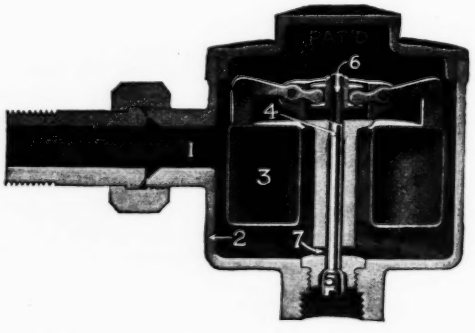
$250,000 plant, Kalamazoo, Mich.; Knight Handley Automobile Co.

SHOP EFFICIENCY BIGGER BUSINESS **NEW** SELLING OPPORTUNITIES REPLACEMENT WORK

EQUIPMENT AND IMPROVEMENTS

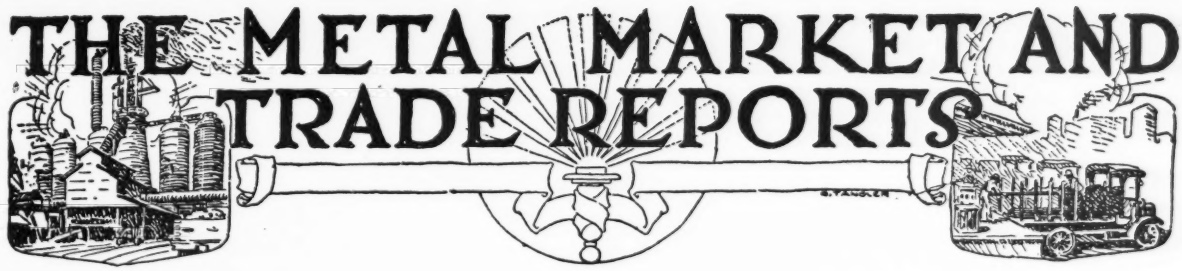
New Valve For Steam Heating Systems.

The cross-sectional view reproduced herewith of a new valve designed for steam heating systems operates as follows: The air and water enter through the aperture 1 and flow into the body 2, until a sufficient amount of condensation collects to raise the float 3. This forces down the rod 4, thus automatically forcing the water and air through the aperture opened up by the dropping of the valve 5 into the return line. The seat 5 has a capillary air-port by which air and water automatically escape before the accumulation of water in the valve sufficient to operate the float. No. 6 is an air passage through



the rod 4, the purpose of this being to secure constant agitation of the water as it accumulates in the valve. This constant agitation equalizes the pressure in the valve, and by keeping the air in constant circulation with the water, assures the discharge of the air at the same time with the water. No. 7 is a removable post to which all parts of the valve are attached. It can easily be lifted out by simply unscrewing the top of the valve. The valve will take care of the condensation of any radiator, having a heating surface of 300 sq. ft. or less, or two-pipe heating systems up to and exceeding 10 lb. pressure.

THE METAL MARKET AND TRADE REPORTS



Steel and Iron.

Prospects for full production by the iron and steel industry have further improved during the week just past. Transportation has improved and there has been an additional decrease in the amount of finished steel banked up at the mills and the railroad officials have promised additional cars, including stock cars, which are a temporary expedient.

It does not seem to be generally realized in the trade what a large output is being made. The monthly blast furnace report of "The Iron Age" indicates that at the beginning of the month pig iron was being made at the rate of 38,550,000 gross tons a year. This, taking the liberal and perhaps more accurate estimate of 45,000,000 tons, is 86 per cent of capacity. The gain over December was 23 per cent February showed an average gain of 6 per cent over that of January, which had shown a gain of 15 per cent over December. Thus there has been a steady and progressive increase in actual pig iron output. The most conservative estimates are that the railroads will buy about 40,000 cars on the present movement, but more sanguine estimates run the figures up to 100,000. Even that number, however, would represent less than half the amount the railroads used to buy occasionally in a year. The early program of enlarging facilities contemplates completion of the work before the advent of another winter. The supreme court decision in the United States Steel Corporation case will not affect the corporation's price and sales policies. These policies are encouraged largely by banking interests, whose conservative attitude is well known. More in the trade today than a month ago expect the wisdom of the corporation's adherence to March 21st prices to be vindicated as time passes.

In the matter of steel for nearby and second quarter the smaller independent producers have things pretty much their own way in the matter of price whenever they are in a position to furnish the material demanded.

Regular tin plate customers are pressing heavily for increased deliveries, and the producers are making every effort to accommodate them. Coke production in the Connelsville region was 248,035 tons, an increase of 12,878 tons over production of the previous week. In the case of coal little improvement has actually taken place thus far. Prices for pig iron are quoted as follows:

No. 2X, Philadelphia	$45.35
No. 2 Southern, Cincinnati	43.60
No. 2 Furnace, Chicago	43.00
Basic, Valley	41.50@43.00
Bessemer, Pittsburgh	43.40

Copper.

Last week was a quiet week in the copper trade and the market is easy for want of buying support. It is estimated that the larger consumers are only partially covered at best over the current month, and must soon enter the market. But so far expectations have been disappointing. They have been following the market closely and inquiries indicate that a buying wave may be near. In the meantime stocks are growing, and there is some anxiety to sell March delivery. Dealers have quoted as low as 18¼ cents for comparatively small lots electrolytic, but the producers claim that they are not offering the current month under 18¾ cents, and they ask 19 cents for second quarter. Sales have been made at this figure, but the tonnage was small. Export business is also quiet, though with a substantial rise in exchange a brisker movement is in prospect.

Tin.

Tin has shown a normal capacity for fluctuation in London. After a somewhat sensational rise and decline the previous week which left it about where it began, the market with comparatively slight variations came slowly down and at the end of the week closed at a decline since March 1st of £10 10s for spot. The New York market on the other hand advanced, not in the London showing of course, but on the higher rate of exchange. The net gain in New York was about 1¾ cents per pound for spot and 1 cent for shipment. The price at the end of the week for March-April position was 64¼ cents and May and June 64½ cents. Some business was done toward the close of the week with consumers, but the bulk of the trading was among traders.

Lead.

Demand for lead has not been particularly heavy, but it has at least been sufficient to absorb the offerings and hold the market firm. Production has not apparently improved and is lighter than consumption. Prompt lead has been difficult to obtain owing to delays in transportation, and the price is not so inviting as to induce consumers to contract for a heavy tonnage beyond March. With the end of winter and improved traffic conditions, also labor, buyers look for an easier market. The immediate outlook, however, is not too encouraging. The principal producers have not altered their price of 9 cents New York and 8¾ cents East St. Louis, but it is really impossible to buy lead at these prices. The outside market is strong. Some holders ask 9½ cents for prompt delivery New York, but buyers do not bid over 9¼ cents.

Zinc.

The market was quiet all of last week. There was fair inquiry, but little active business. Domestic consumers showed little interest, and exporters were practically out of the market. Offerings of March are light and sellers ask 8.85 cents at East St. Louis.

New York Old Metal Market.

The following prices are current for old metals:

	Buying	Selling
Copper, heavy	16 to 16¼ cents	17 cents
Copper, light	14½ to 15 cents	16 cents
Brass, heavy	10½ to 11 cents	12 cents
Brass, light	8 to 9 cents	10 cents
Brass turnings	9 to 9½ cents	10½ cents
Lead, heavy	7¾ to 8¼ cents	9¼ cents
Tea lead	6¼ to 6¾ cents	7¾ cents
Scrap zinc	5¼ to 5¾ cents	6½ cents
Solder joints	12 to 13 cents	14 cents
Mixed babbitt	10 to 11 cents	12 cents
Composition turnings	14 to 14½ cents	15½ cents
New brass clippings	11¾ cents	12¾ cents
Tin foil	44 to 46 cents	48 cents
Cast aluminum	24 to 25 cents	26 cents

Chicago Old Metal Market.

Chicago wholesale dealers' prices are nominally as follows:

Heavy yellow brass	11¾ to 12¼ cents	13 cents
Brass, light	9¾ to 10¼ cents	11 cents
Brass borings	14 to 14½ cents	15 cents
Brass turnings	10 to 10½ cents	11½ cents
Red brass	16¼ to 16½ cents	17½ cents
Copper, crucible	17 to 17¼ cents	18 cents
Copper, heavy	16¼ to 16¾ cents	17½ cents
Copper, light	14¾ to 15¼ cents	16 cents
Lead, heavy	7⅞ to 8⅛ cents	8½ cents
Tea lead	4¾ to 5¼ cents	5¾ cents
Zinc	6¼ to 6½ cents	7 cents
Solder joints	9½ to 10½ cents	11½ cents

The Pipe Market.

Quotations on less than car lots of full weight steel pipe are as follows:

	Butt Weld Blk.	Butt Weld Galv.	Lap Weld Blk.	Lap Weld Galv.
⅛ to ⅜ inch	42	14	.....	.....
½ inch	46	30	.....	.....
¾ to 3 inch	49	34	.....	.....
2 inch	.....	.....	42	28
2½ to 6 inch	.....	.....	45	31
7 to 12 inch	.....	.....	40	25

The quotations apply to all shipments from stock, regardless of quantity.

On extra strong and double extra strong steel pipe in less than car lots, quotations are as follows:

	Extra Strong Plain Ends Butt Weld Blk.	Extra Strong Plain Ends Butt Weld Galv.	Extra Strong Plain Ends Lap Weld Blk.	Extra Strong Plain Ends Lap Weld Galv.	Double Extra Strong Plain Ends Butt Weld Blk.	Double Extra Strong Plain Ends Butt Weld Galv.	Double Extra Strong Plain Ends Lap Weld Blk.	Double Extra Strong Plain Ends Lap Weld Galv.
⅛, ¼ and ⅜ inch	36½	11½	.....	.....	.....	.....	.....	.....
½ inch	41½	16½	.....	.....	29½	.....	.....	.....
¾ to 1½ inch	45½	20½	.....	.....	32½	.....	.....	.....
2 to 2½ inch	46½	21½	.....	.....	34½	.....	.....	.....
3 inch	46½	21½	.....	.....	.....	.....	.....	.....
2 inch	.....	.....	38½	13½	.....	.....	27½	.....
2½ to 4 inch	.....	.....	41½	16½	.....	.....	29½	.....
4½ to 6 inch	.....	.....	40½	15½	.....	.....	28½	.....
7 to 8 inch	.....	.....	34½	9½	.....	.....	21½	.....
9 to 12 inch	.....	.....	29½	.....	.....	.....	.....	.....

With threads only, the basing discount is 1½ points lower. With threads and couplings the basing discount is 3 points lower. The quotations apply to less than car lots.

Quotations on full weight genuine iron pipe, in less than car lots, are as follows:

	Butt Weld Blk.	Butt Weld Galv.	Lap Weld Blk.	Lap Weld Galv.
¼ inch	+8	+36	.....	.....
⅜ inch	17½	+11½	.....	.....
½ inch	21½	1½	.....	.....
¾ to 1½ inch	26½	8½	.....	.....
2 inch	.....	.....	20½	4½
2½ to 6 inch	.....	.....	22½	7½
7 to 12 inch	.....	.....	17½	2½

These quotations are f. o. b. Pittsburgh, and apply to all shipments from stock, regardless of quantity.

On extra strong and double extra strong genuine wrought iron pipe, with plain ends, and in less than car lots, the quotations are as follows:

	Extra Strong Butt Weld Blk.	Extra Strong Butt Weld Galv.	Extra Strong Lap Weld Blk.	Extra Strong Lap Weld Galv.	Double Extra Strong Butt Weld Blk.	Double Extra Strong Butt Weld Galv.	Double Extra Strong Lap Weld Blk.	Double Extra Strong Lap Weld Galv.
⅛ to ⅜ inch	15½	+12½	.....	.....	.....	.....	.....	.....
½ inch	20½	+ 7½	.....	.....	.....	.....	.....	.....
¾ and 1 inch	26½	+ 1½	.....	.....	.....	.....	.....	.....
1¼ inch	26½	+ 1½	.....	.....	.....	.....	.....	.....
1½ inch	26½	+ 1½	.....	.....	.....	.....	.....	.....
2 inch	.....	.....	20½	+ 4½	.....	.....	.....	.....
2½ to 4 inch	.....	.....	22½	+ 3½	.....	.....	.....	.....
4½ to 6 inch	.....	.....	22½	+ 3½	.....	.....	.....	.....
7 to 8 inch	.....	.....	12½	+13½	.....	.....	.....	.....
9 to 12 inch	.....	.....	6½	+18½	.....	.....	.....	.....

These retail prices are f. o. b. Pittsburgh, and apply to all quantities except in car lots. With threads only, the basing discount is 1½ points lower. With threads and couplings, the basing discount is 3 points lower.

To ascertain the price in your city, deduct the proper less-than-carload freight rate from Pittsburgh to that city. Example: Base price on ¾ to 3-inch black steel pipe is 49 per cent Pittsburgh. The less-than-carload rate to Patson is 17 cents per hundred. The price, therefore, freight allowed to Patson is:

49
1.7

47.3 per cent.

All other sizes to be figured on a comparative basis.

The Pipe Market in New England and in Parts of New York State.

In New York State on all points on the Hudson River, and in all of New York State south and east of Albany, in all New England and for export, quotations are as follows:

Wrought Steel Pipe.

	Black	Galv.
⅛ to ⅜ inch	38	4
½ inch	43	26
¾ to 3 inch	47	31
2 inch lap	38	23
2½ to 6 inch	42	27
7 to 12 inch	33	16

Extra Heavy.

	Black	Galv.
⅛ to ⅜ inch	31	+ 2
½ inch	37	13
¾ to 1½ inch	42	18
2 to 3 inch	43	19
2 inch lap	34	10
2½ to 4 inch	37	14
4½ to 6 inch	31	12
7 and 8 inch	25	4
9 to 12 inch	18	+ 3

Double Extra Heavy.

	Black	Galv.
½ inch	16	—
¾ to 1½ inch	21	—
2 to 2½ inch	23	—
2 inch lap	14	—
2½ to 4 inch	16	—
4½ to 6 inch	15	—
7 to 8 inch	2	—
14 to 20 inch O. D	20	—

Genuine Wrought Iron Pipe.

	Black	Galv.
⅛ to ¼ inch	12	+25
⅜ inch	13	+24
½ inch	18	+ 4
¾ to 1½ inch	25	5
1¼ inch lap	net	+19
1½ inch	12	+ 6
2 inch	16	+ 2
2½ to 6 inch	18	1
7 to 12 inch	6	+13

Extra Heavy.

	Black	Galv.
⅛ to ⅜ inch	3	+30
½ inch	13	+17
¾ to 1½ inch	21	+11
1¼ inch lap	net	+34
1½ inch	10	+21
2 inch	13	+17
2½ to 4 inch	15	+13
4½ to 6 inch	6	+14
7 to 8 inch	+ 5	+26
9 to 12 inch	+12	+33

For pipe handled through shop or cut to length, add 10 per cent to the net price of pipe.

Cutting and threading 12 inch and smaller—net list prices.

Cutting and threading 14 inch and larger—25 per cent discount from list prices.

Cutting only, two-thirds of the threading price.

These prices include cartage to point of destination, if same is within cartage limits—for domestic purposes. If outside the cartage limits, they are f. o. b. shipping point, with actual freight allowed to destination, not exceeding 20 cents per 100 lbs. When shipped for export, the price includes cartage to point of shipment, if same is within reasonable cartage limits—with no freight allowance.

THE AUTOMOTIVE INDUSTRY IS SOLVING LABOR PROBLEMS.

Few Strikes in Automotive Plants. Volume of Production Is Sustained. Open Shop.

There has been comparatively little labor trouble in the automotive industries. Passenger car and truck manufacturers have coped with problems of employes in a way that offers practical lessons for the construction industry.

In the automotive industry there are many examples of what may be termed "industrial democracy." There are many instances of co-operation between employer and employe. Skilled labor in the automobile plants knows that the law of supply and demand governs the cost of commodities. Statistics have shown that very few operate closed shops. There is no distinction made between union and non-union labor, but more than 90 per cent operate open shops. The increase in the wages of automobile mechanics amounts to approximately 80 per cent since the armistice.

Almost all of the known methods of profit sharing, bonuses, premiums for rapid production, co-parternership plans, employes' representation, home building plans, etc., are in successful operation among the manufacturers of cars, trucks and parts.

The bonus systems in most cases include continuous attendance and length of service as requisites, six months' continuous service usually being the minimum. Bonuses are then paid at the end of nine months and at the end of twelve months. Such bonuses were established in certain plants as a war measure, but have been continued.

The anniversary check plan, which is very successfully used by one large manufacturer, allows each employe to receive an anniversary check on each anniversary of his employment, based on his total earnings for the previous year. On the first and up to and inclusive of the fourth anniversary the workers receive 5 per cent, and on the fifth and each succeeding anniversary 10 per cent of earnings during the year in addition to their salary.

Co-partnership arrangements are also quite common, but continuous service is necessary to entitle the employes to purchase stock in the company. Stock to the amount of 20 per cent of annual earnings may be purchased by any employe who has been with the company three months or more. Stock applications must be accompanied by an initial payment of 10 per cent; 50 per cent of the cost of the stock is taken care of by the employer, provided the employe remains in service and in good standing for four years. The other 40 per cent is paid by the employe in installments during the four years, says "The American Contractor."

In one plant all factory employes who have been in service for two years or more are entitled to annual vacations of one week with full pay. Another maker who manufactures bodies allows a certain direct labor cost for each particular type of body, and if the body is built for less the difference is divided with the men.

A liberal profit-sharing plan is in operation by another maker, who divides with the employes 25 per cent of the profits pro rata in proportion to the amount of money paid to each employe that remains in the employ of the company throughout the year.

In other factories a 10 per cent bonus is added to the pay envelopes of the men each week, provided that they have not been late or absent. This maker reports a very greatly decreased turnover in help as a result. A $1,000 paid-up life insurance policy is provided for each employe free of cost and increased to $1,500 at the end of the first year's service.

Better working conditions must inevitably result where the management and men co-operate. Housing conditions are improved. More men own their homes by means of co-operative buying. Co-operative stores and even banks are being established.

A Change of Costs from $1.45 Per Foot to $2.90.

The editor of the Bulletin of the Illinois Society of Architects was recently shown a carefully compiled statement of proposals made for two building projects which forcefully tell the story of today's building costs. In September, 1917, a firm of Chicago architects prepared working plans and specifications and secured proposals for a four-story and basement, standard mill, sprinklered factory building, to be constructed on a switch track in Chicago. The building was designed for a live load of 200 pounds per square foot, and at least three separate proposals were received for each of the various branches of work. Bids were opened and tabulated on September 1, 1917, and totaled $1.45 per square foot of gross floor area.

The project was temporarily abandoned, and in June, 1919, proposals on the same plans and specifications were secured, and from the same contractors who figured in 1917. The summary of the low bids showed that the cost of June 18, 1919, was $1.87 per square foot of floor area.

The owner believed that costs would be lower in 1920, and deferred awarding of contracts, and in February, 1920, the same bidders were again asked for proposals, and a tabulation made on February 3, 1920, showed the present cost to be $2.90 per square foot, as compared with $1.45 of September, 1917, or an increase of 100 per cent.

The same firm of architects in June, July and August of 1919, awarded contracts for a standard mill sprinklered factory in Chicago, designed for a live load of 175 pounds per square foot, the building containing a gross floor area of 120,000 square feet, at a total cost of $250,000. Recently the owner wished to have another unit added to the same plant, from the same plans and specifications without a single change in the design of any of its parts. Each contractor for the original unit was asked for a formal bid to duplicate his work, and the total of the proposals received showed a total cost of $408,000, or an increase of 63½ per cent since August, 1919.

THE BELGIAN STEEL AND METAL INDUSTRY.

According to the report of the inspector-general of mines, a battery of twenty coke ovens has been put into operation at the Charbonnage de Belle Vue at Elouges; another at the Havre division of the Charbonnages de Bois-du-Luc, writes United States Consul-General Henry H. Morgan, Brussels, Belgium. The sheet rolling mill of the Sambre et Moselle Co. (Chatelineau division) was put into operation in October.

One of the three blast furnaces at the Usines Metallurgiques at Hainaut suspended operations owing to a lack of ore. A second blast furnace was put into operation at the Ougree Marihaye plant, but the irregularity in the supply of coke and ore are hindering the operation of the blast furnaces, which, however, are producing 300 tons a day. At the steel plant of the same company a new rolling mill has been put into service.

The metallurgical company of Corphalie has lighted a zinc oven, the Laminne Co. four ovens, and Dumont Bros., at Sclaigneaux, ten zinc ovens, producing 228 tons a month and a medium blast furnace producing ten tons of lead a day. The Vielle Montagne has put additional ovens into operation and at present has eighteen active at Flone and thirty-two at Valentin-Cocq.

The Treasurary has announced that a decrease of $26,057,387 in the public debt was effected in February, leaving a total debt of $25,404,331,707.

AMONG THE PLUMBING AND HEATING CONTRACTORS

Illinois

Chicago and Vicinity.

G. J. Feldkamp, 6246 Kimbark Avenue, will install the plumbing in a new $8,000 factory to be erected for the Martin Senour Varnish Co., at Forty-ninth Place and Halsted Street.

Gallagher & Speck, 215 West Congress Street, have secured the heating contract, and W. G. Cornell Co., 80 East Jackson Boulevard, has been awarded the plumbing contract on the new $60,000 public garage to be erected at Twenty-third Street and Calumet Avenue.

George A. Henrich, 5650 Broadway, has been awarded the heating contract for the new $250,000 deaconess home to be erected for the Evangelical Association in America, at Wisconsin and Hudson Streets.

N. B. Brown, 19 South LaSalle Street, and Thomas O'Malley, 308 West Oak Street, have secured the contracts to install the heating and plumbing, respectively, on the new $50,000 residence and garage to be erected at 456 Barry Avenue for Fred Backlenber.

Paul H. Miller, 7047 South Carpenter Street, has secured the contract to install the heating in the new $35,000 residence and garage to be erected at 6841-6843 Constance Avenue, for E. G. Shinner.

O. W. Jovila, 133 West Washington Street, will install the heating plants and J. J. Kratz, 1005 South Wabash Avenue, the plumbing in the five new $15,000 bungalows, which are to be erected in various locations by K. R. Beack, of 196 North Clark Street.

Mehring & Hanson Co., 118 North Franklin Street, and E. Baggot Co., 17 East Lake Street, have secured the heating and plumbing remodeling contracts, respectively, on the Engineers' Club Building at 314 Federal Street.

F. W. Fullmer, 185 North La Salle Street, will install the plumbing in the new $100,000 factory and office building to be erected for A. R. Dole Co., at 1923-1933 Carroll Avenue.

E. J. McDonough Co., 350 North Clark Street, has secured the heating contract, and Jacob G. Weber Co., 2841 North Clark Street, the plumbing contract on the new one-story $60,000 factory building to be erected for the Semrad Chemical Co., at Greenview Avenue, near Diversey Boulevard.

Riordan Bros., 5042 West Madison Street, and Dwyer & Co., 31 West Illinois Street, have secured the plumbing and heating contracts, respectively, on the $50,000 factory building to be erected for Arnold Bros., at 1743 Carroll Avenue.

Samuel Kersten, 554 West Jackson Boulevard, will install heating and plumbing systems in the new $20,000 paper box factory to be erected at Hermitage and Austin Avenues, for the Ferguson Lauder Mfg. Co.

George L. Rood, 70 West Lake Street, and John Gorman, 6447 South Halsted Street, will install the heating and plumbing, respectively, in the $10,000 residence to be erected for J. C. O'Mears at Eighty-first and Robey Streets.

W. A. Pope, 26 North Jefferson Street, has been awarded the contract to install the heating, and John J. Colnan, 440 South Dearborn Street, has secured the plumbing contract on the new $350,000, three-story, 72 class room, school building to be erected for the Board of Education at Augusta and Laramie Streets.

Roberts Plumbing Co., 4544 North Western Avenue, will install the plumbing, and A. K. Baker, 408 North Wells Street, will take care of the heating in the new $200,000 auto garage warehouse to be erected for the Illinois Auto Storage Co., at 2101 Fisk Street.

Other Cities in the State.

The City Plumbing Co., Centralia, has been awarded the contract to install plumbing in the new $25,000 church which is to be erected in Centralia for the First Church of Christ.

C. M. Conger, Macomb, has been awarded the heating and plumbing contracts on the new $75,000 community high school to be erected for the Board of Education in Galesburg, Ill.

Georgia

Atlanta and Vicinity.

Atlanta's remarkable progress in building is reflected in the February statement of building activity of the Massell Construction Co., one of the biggest concerns of this kind in the South, which shows that this company alone now has fifteen big jobs under way with a total valuation far exceeding $1,000,000. In spite of the fact that labor is scarce, building materials high and the demand far exceeding the supply, building activity in Atlanta is the greatest in the history of the city. The February report in building permits issued exceeds that of any previous month in the city's history, surpassing even January of the present year when all previous records were shattered. All this reflects to the welfare of local plumbing and heating concerns, all of whom continue to enjoy an enormous volume of business all over the state, their only trouble being lack of material.

The city of Atlanta takes pardonable pride in its four plumbing inspectors, J. A. G. Beach, chief inspector, an early member of the plumbing force of Hunnicutt & Bellingrath;

Plumbing Inspectors in Atlanta, Ga.—From left to right, sitting: C. O. Harmsen, J. A. G. Beach; standing: E. G. Quarles and M. J. Yarbrough.

C. O. Harmsen, who received his training with Hunnicutt & Bellingrath; E. G. Quarles, an Alabama find, who also started his career in Hunnicutt & Bellingrath's establishment, and M. J. Yarbrough, who learned his trade in the Stewart & Steinhauer plumbing shop.

Atlanta is to have a new 28,000,000 gallon steam turbine pump at the River station that is guaranteed to deliver 22,000,000 gallons of water to a reservoir five miles distant every twenty-four hours. The pump will cost about $95,000.

Two new apartment buildings are to be completed in Atlanta in the next year and a half, that will give the city the two largest apartment houses in the entire South. One of these will be constructed at West Peachtree and Sixth Street, by William Candler, and will cost approximately $2,500,000. The other will be constructed at Peachtree and West Peachtree Streets, by Fitzhugh Knox, a local building contractor, and will cost approximately $1,250,000. Another interesting building announcement was made this week by Sig Samuels, owner of the Criterion Theatre, who stated that a $500,000 company has been organized to erect a six-story theatre and office building in the heart of the city's downtown shopping district. The cost of this building will be nearly half a million dollars.

Though the Fred Cantrell Co., of Atlanta, entered the lowest bid for plumbing and heating work on the new courthouse building at Knoxville, Tenn., no contracts were awarded because, when the construction bids were opened and totaled, it was learned that the amount exceeds the sum available for the work. The city has $125,000 on hand for this courthouse but the total bids, including plumbing and heating, reached almost $160,000. The plans will have to be redrawn and bids advertised for again so that the cost will not exceed $125,000. The Fred Cantrell Co.'s bid amounted to $11,585. Other bids for plumbing and heating amounted to $15,485.86.

Georgia plumbing and heating contractors are much interested in the new law that has just been passed by the South Carolina state legislature. Under this law every hotel in the state will be required to be equipped with adequate fire escapes, to provide proper plumbing and waterworks where water is available, etc. The other requirements would be of no interest to the plumbing and heating trades. It is not contended that Carolina hotels are any worse than the hotels in other states, and it is pointed out that there is a great deal of room for similar improvements in scores of hotels. Georgia will watch the Carolina hotel regulations with a great deal of interest, and if the plan works out successfully, some such legislation may be enacted in this state also. At any rate Carolina plumbers will benefit accordingly, and so will the plumbing contractors of other states if the plan is carried out on any scale.

The joint committee from the South Carolina house and senate appointed to investigate the condition of the heating plant in the state house at Columbia has made a report recommending an appropriation of $50,000 for the installation of a new heating plant. It recommends further that a joint committee be at once appointed to make the necessary arrangements so that the plant can be installed at once.

Pennsylvania

Pittsburgh and Vicinity.

Contracts are to be let soon for the construction of one of the largest ice plants in the state, plans for which were filed a few days ago by Architect James P. Piper, 2237 Oliver Building, with the local bureau of building inspection. The new plant is to be situated on Friendship Boulevard, between Pearl and Edmond Streets, and is expected to be completed by May 1st. It will be owned by the People Ice Co. The plant will be operated entirely by electricity, and the common complaint of "smoke nuisance" is to be eliminated. In connection with the main structure there will be a storage warehouse, capable of housing 6,500 tons of ice.

Bids are being received for the installation of heating and ventilating systems in the Fourth Street school building, Jeanette. Charles T. Meyers is secretary.

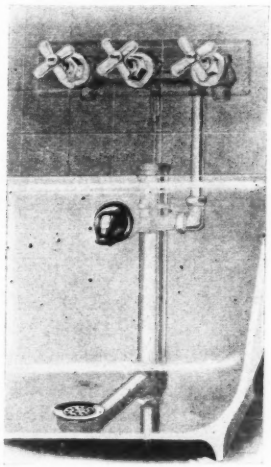
Bids for the Swissvale High School building have been extended to March 17th, at 8 p. m.; George L. Pyle is secretary. Bids on plumbing, heating, ventilating and electrical jobs are to be separate.

Among the bidders on the new high school building at Homestead are: Plumbing—Moss & Blakeley, Weldon & Kelly Co., A. W. Miller Co., Wickes & Co., Gus Goedell, Homestead; Reis Bros., Homestead. Heating—McGinness Co., McGinness-Smith Co., Lyle G. Emery, New Castle; Moss & Blakeley, Homestead.

The Speakman Deshler Bath Fixtures

For Built-In Tubs, Among Its Dozen or More Points of Superiority has These Big Features

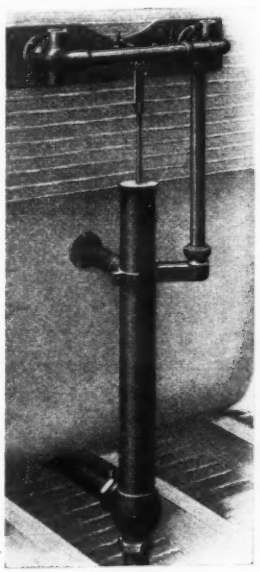
—the Speakman Hi-seat valve—seat of valve is only 1¼ inches from face of the wall—easy to examine, easy to regrind—when it is necessary. The shanks of the valves extend beyond the face of the wall and all working parts are removable.



Front and Rear View of the Deshler Fixture.

—valves and waste operating device are tied together rigidly by a malleable iron plate. The fine bone china handles and escutcheons are always in perfect line.

The escutcheons have threaded brass bushings cemented in them which screw on the shanks of the valves. These escutcheons make up tight against the wall and will not work loose.



And then—where a shower is being installed over the tub the by-pass feature of the Deshler valve saves 8 fittings, 6 nipples, 16 threads and 16 chances of leak.

These are but a few Deshler points. We will gladly tell you others. The Speakman Deshler Bath Fixture is illustrated and described in our recent catalog which your name and address on a post card brings.

SPEAKMAN CO.
Wilmington, Delaware

THERMO SYPHON TRAP

For Vapor, Vacuum, Atmospheric and Modulation Systems

This trap is designed especially to handle the condensation from any type of one-pipe or two-pipe steam heating systems, there being either a vacuum or pressure in the system, and NOT TO EXCEED 20 LBS. PRESSURE ON BOILER.

Assures perfect circulation and noiseless operation. Costs less than a pump, does not involve repairs or electric current bills, saves expense of pitting boiler and eliminates receivers and air relief tanks. Overcomes faulty operation in old heating systems.

We build traps for every class of service. Let us help solve your condensation problems.

Write for Bulletin No. 16.

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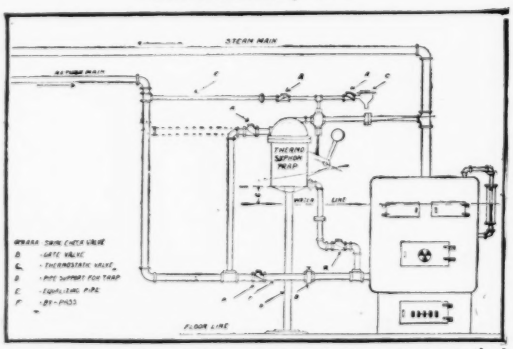
Trap Specialists

FRANKLIN, VA.



Application of Thermo Syphon Trap, showing proper method of piping for draining any heating system.

The Sniveley Plumbing Co. has the contract for heating the new commercial building at 907 Penn Avenue.

The American Heating Co. has the contract for installing heating in a new commercial garage on Baum Boulevard and Enfield Street. The plumbing on the same structure has been awarded to the Knoxville Plumbing Co.

Secretary E. M. Tate and other officials of the Pittsburgh Builders' Exchange, have learned of several new industries soon to locate in the Pittsburgh district, which will mean an addition to the new construction campaign here, of several millions of dollars. One of the concerns is a large electrical company from one of the northeastern states, which is said to be looking for a suitable site in the East Liberty district. The inquiries are reported by the Pittsburgh board of trade which, at its next regular meeting on Monday night, will hold a community session, the subject under discussion being "The Housing Problem." A report from the Pennsylvania state chamber of commerce will be one of the principal features of the meeting.

A building permit has just been issued for a large, high-class exclusive apartment building on Ruskin Avenue, between Fifth Avenue and Bigelow Boulevard, and contracts that will measure with the largest of the year are reported ready for local builders and equipments. The building is to contain about 120 four to seven-room apartments, with such unusual features as a nursery with a nurse in attendance, a roof garden, tea dance, Italian garden in the courts and a storage garage for 50 cars. The building will be of steel, covered with Indiana limestone, gray brick and white terra cotta.

The city council will be addressed on next Wednesday afternoon at a special meeting by a committee of the most prominent social workers in the city, who will urge immediate steps by the city to promote the new housing program. The committee was appointed at a recent meeting of the Social Workers' Club, at which Dean W. H. Walker, of Duquesne University, whose prominent business, civic and political bodies of the city, made a stirring address on the lack of accommodations and the opportunity afforded for rent profiteering. Dr. Walker stated that about two-thirds of the necessary capital for the building program had been offered. The organizations represented in the social workers' committee are: The Associated Charities, United Hebrew Relief Association, Red Cross, Pittsburgh Association for the Improvement of the Poor and the Conference of Catholic Charities. Pittsburgh's master builders, plumbers, contractors and craftsmen have pledged their support to the campaign.

Bennett Plumbing Co., Dormont, will install the plumbing in the $12,000, two-story, duplex residence to be erected on Florence Avenue, Mount Lebanon.

Oil City.

O'Brien Bros., 111 State Street, have secured contracts to install the heating and plumbing in the residences of Mrs. J. H. Wiseman and Mrs. C. McCafferty, and have also installed the heating plant in the residence of W. D. Cavanaugh.

The Douglas Plumbing Co. has been awarded the contract to install plumbing in twenty new residences to be erected in this city. This company has recently moved to 7 Central Avenue, and is just now arranging a modern showroom and display window.

William G. Eckert, 20 Elm Street, will install new plumbing and heating systems in the Arlington Hotel. Consideration $40,000.

Other Cities in the State.

Carson & Coven, Charleroi, have secured the contracts for plumbing installation in seven new residences.

Valley Plumbing Co., 602 Fallowfield Avenue, Charleroi, will install the plumbing and heating in the new $10,000 residence of J. L. Squires in Bentleyville.

J. Sabin, 123 High Street, Brownsville, has been awarded the contract for plumbing and heating installations in the $40,000 Murphy Five and Ten Cent Store, and has also secured the plumbing contract on the $25,000 Gottesman Building.

The Stahl Plumbing Co., Connellsville, has retired from business.

Gardner Bros., 507 Lawrence Avenue, Elwood City, have secured the contracts to install plumbing and heating in fifteen new houses in that city. They have just completed the plumbing and heating in two other residences, and are at present installing the plumbing and heating in the new $150,000 Simon Building.

Withers & Sons, New Castle, have been awarded the contract to install the heating and plumbing in the five-story Wright Building, to be erected on East Washington Street,

at a cost of $100,000. The plumbing, heating and ventilating systems in the new high school, to be erected in New Brighton, will also be installed by this firm.

Stevenson Co., 30 North Beaver Street, New Castle, will install the plumbing and heating in seven new houses to be built in New Castle, and is at present completing ten houses for William Nunn.

Stefranak & Sons, Farrell, have the contract for the plumbing and gas fitting in the $12,000 Manco Building.

P. J. Kock, 709 Broadway, Farrell, has been awarded the contract for the installation of plumbing in the $200,000 addition to the Farrell High School. He is completing the plumbing and heating in J. Freeble's new $20,000 residence and has five other residence jobs booked.

The L. L. Lord Co., Meadville, has secured the contract to install the plumbing in two $150,000 additions to the college in that city.

William Sellers, now in the Masonic Temple, Connellsville, will move to new quarters on South Pittsburgh and Church Place about May 1st, where he will have a modern showroom. He has secured the contracts for the installation of plumbing and heating in the $20,000 residence of William Dull and in two more residences in the city.

Cincinnati and Vicinity.

The Longview Hospital Building Commission has approved plans for a new receiving cottage at the institution, estimated to cost $422,438.

The first automatic telephone exchange in Greater Cincinnati will be built by the Citizens' Telephone Co., in Newport, Ky. The exchange will be located on the site now ocupied by the A. L. Andrews residence.

The Attlesey Co. has been awarded the plumbing contract on the addition to the Charles Boldt Paper Mills, in Linwood.

The scarcity of labor will probably be the greatest detriment to large spring building program, now being planned for Cincinnati, according to contractors and members of the Builders' Exchange. Men engaged in the building field say the coming spring season shows every indication of being one of the busiest in years. "The public has become reconciled to the present high prices," said Howard Monce, president of the Exchange, "and is ready to go ahead with its building program as fast as service can be rendered by the contractors."

The scarcity of materials is another item which the public must be educated to understand. Mills are working to capacity and manufacturers of brick and other materials are working above their capacity in order to supply the demand, but the majority are behind with contract materials. In spite of this, builders are optimistic and will make every effort to supply the demand for homes and industrial building. Numerous large projects are now being planned for this city.

Henry Niemes, 4112 Hamilton Avenue, has been awarded the contract to install the plumbing and heating in the $40,000 residence and garage to be erected for the Marbley & Carew Co., at Holly Lane.

Rybold Heating Co., Fifth and Sycamore Street, and the Richard Murphy Plumbing Co., 238 East Fourth Street, are to install the heating and plumbing, respectively, in the $10,000 residence to be erected on Trimble Avenue.

Cleveland.

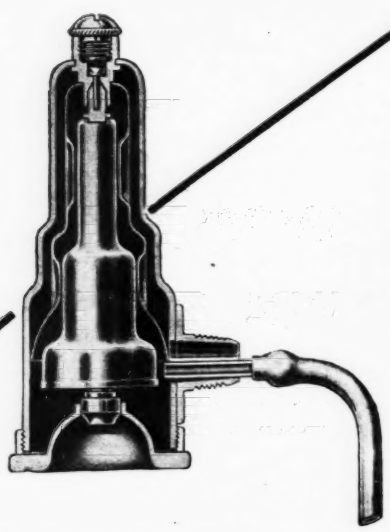
Koblitz Plumbing & Heating Co., 1310 Huron Road, will install the plumbing and heating in the $90,000 factory building which is to be erected at Leavittsburg Road, Warren.

Kramer & Kravitz, 10613 Lee Avenue, Cleveland, will install the plumbing in the forty new residences, which are to be erected at a cost of $8,000 each, for the Realty Syndicate Co., at Iowa Avenue and 124th Street.

John Ruzieka, 4799 Lester Avenue, Cleveland, has been awarded the plumbing contract on the $8,000 residence to be erected at 3523 East 100th Street.

L. Gordon, 5208 Scoville Avenue, Cleveland, will install the plumbing in two $6,000 residences to be erected at 3287-3289 East 123rd Street.

WHITAKER
Start with a good boiler—
The way to insure a trouble-proof hot water supply is to install a good boiler and heater —that means a reserve supply of hot water to meet varying requirements.
For certain satisfaction put in Whitaker Steel range boilers; their history is known, they are made in our own shops, sheets from our own mills, and work is inspected at various stages.
Whitaker Steel boilers are galvanized by dipping after manufacture, insuring a perfect unbroken spelter coat with no metal exposed to rust. All sizes, riveted or welded.
WHITAKER-GLESSNER CO.
Range Boiler Dept PORTSMOUTH, O.



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Siphon Air and Vacuum Valve

NON ADJUSTABLE **AUTOMATIC**

insures satisfied customers because it eliminates all worry and annoyance and saves heat and fuel.

It insures against leakage of steam, water and return of air, and keeps all sections of the radiator at an even temperature.

A fraction of an ounce of pressure will automatically operate the valve, discharging the air and preventing its return to the heating system.

Full Efficiency Guaranteed for Five Years

W. A. Russell & Co.

332 S. Michigan Ave. **63 W. 37th Street**

CHICAGO **NEW YORK CITY**

Warden & Leese, 2450 Prospect Avenue, Cleveland, and W. G. Cornell Co., Leader-News Building, will install the heating and plumbing, respectively, in the five stores and commercial and warehouse buildings, which are to be erected at a cost of $450,000 on Huron Road.

Dayton.

The Bricher Plumbing Co., 633 Wayne Avenue, Dayton, will install the heating and plumbing in the $8,500 ice cream plant to be erected for the Ideal Ice Cream Co., on Valley Street.

Thomas Clemins, 112 South Broadway, Dayton, has been awarded the heating and plumbing contracts on the $75,000 service station to be erected for the L. C. R. Storage Battery Co., at Franklin and Ludlow Streets.

Charles Miller, Talbot Avenue, Dayton, will install the heating and plumbing in the one-suite, $15,000 store and apartment building to be erected for the Silent Co-Operative Co., in Goodyear Heights.

Other Cities in the State.

John Arpp, Middletown, has been awarded the heating and plumbing contract on the $50,000 publishing building to be erected for the Journal Printing Co., at Broadway, near Third Street, Middletown.

Michigan

Detroit and Vicinity.

Projects involving millions of dollars are under contemplation in Detroit, which gives assurance of the Greater City's future. It is said it will take the city of Detroit all of this year and part of 1921 to complete the building program inaugurated in 1919 because of the lack of the manufacturers to deliver the new construction products. Many of these projects are nearing completion, while only a few are being held back because of the high cost of materials. Largest among the operations is the construction program of the General Motors Corporation, which is spending $12,650,000, with the Maxwell-Chalmers following a close second with expenditure of $12,000,000. The Seamless Steel Tube Co. will expand its business to the extent of $3,000,000. The proposed Ford Motor Co. expansion on River Rouge, the "Dream City" of Marysville, which will amount to about $75,000,000, is not taken into consideration with the other huge projects. In addition to these, many permits have been issued for new buildings and additions, involving expenditures of millions.

Building permits taken out during the past two weeks number 338, compared with 191 for the corresponding weeks of 1919, carrying with them an aggregate cost of $4,134,315 against $251,133 for 1919. The largest item was a permit for the erection of a four-story factory 616x792 for the Cadillac Motor Co. Additions and alterations numbered 95.

Among the contracts let were:

To Pittlekow Heating Co. plumbing and heating contracts on a brick factory at 129 Franklin Street for the Detroit Gear & Machine Co. A sprinkler system will be installed in this structure by James W. Partlan.

To E. F. Brown the plumbing and heating contracts on a mammoth concrete garage and automobile show-room at Woodward Avenue and Brady Street.

To John J. Davis the heating and plumbing contracts on the two-story, eight-room brick, stone and steel school in Strathmore for the Board of Education of Greenfield District. The cost of this heating and plumbing work approximates $25 000.

To Pittelkow Heating Co. plumbing and heating contracts the addition to the power house of the Burroughs Adding Machine Co. on Burroughs Street and Second Avenue.

To J. H. Batchelor Co. the plumbing contract on a two-story brick and stone store on Mack Avenue, near McClellan, for August Satz.

To J. Church the heating and plumbing contracts on a two-story, two-family brick and stone flat building on Calvert Street near Twelfth.

To Ernest Bros. the plumbing and heating contracts on the two-story, reinforced concrete garage and salesroom building at Cass and Antoinette, for the Gray Estate, and to be occupied by the W. D. Block Co.

To George Rieben has been awarded the plumbing and heating contracts on the two-story brick veneer residence to be located on Boston Boulevard and La Salle Boulevard.

To John J. Davis & Son, plumbing and heating on the hotel being erected on John R. and Farmer Streets.

To William A. Adam the plumbing contract, and to Harrigan & Reid the heating contract on the brick and stone branch bank building to be located on Brewster and Hastings Streets for the Wayne County and Home Savings Bank.

E. R. Brown, 1686 Twelfth Street, will install the plumbing and heating in the new $200,000 church community building to be erected for the Westminister Presbyterian Church at Hamilton Boulevard and Glynn Court.

The Pittelkow Heating & Engineering Co., 94 Larned Street, has secured the contract to install the plumbing in the seven-story factory to be erected for Morgan & Wright, Inc., on Bellevue Avenue.

W. G. Cornell Co. has secured the contract for the heating and plumbing in the new 400-room, sixteen-story Wolverine Hotel, to be erected in Detroit by Marcus L. Freud, at a cost of $2,000,000. Work on this project has been started.

Other Cities in the State.

J. J. Macauley Co., 216-218 Crescent Place, Grand Rapids, has secured the heating contract on the $70,000 chapel addition for the Sisters of Mercy on Cherry Street, in that city.

At a meeting of the Oakland County Sanitary and Heating Engineers held recently, the following officers were elected for the ensuing year; S. H. Burlingham, Pontiac, president; Dee J. Brown, Pontiac, vice-president; W. B. Chaterson, treasurer, and W. H. Haven, secretary.

Indiana

P. B. Arnold Co., Fort Wayne, will install the plumbing in the new Union City High School. Snider & Rotz, Indianapolis, will install heating and ventilating systems.

Williard Warstel, New Paris, has been awarded the contract to install the heating and plumbing systems in the new 14-room school building to be erected in that town.

The Ford Plumbing & Heating Co., Indiana Harbor, has secured the contract for remodeling heating and plumbing systems in a bank at 3405 Michigan Avenue, Indiana Harbor.

Simpson & Adamson, Michigan City, have secured the heating and plumbing contracts on an $80,000 ten-apartment building which is to be erected in that city.

Brunka Bros., 511 Washington Street, Marion, will install the heating plant in the new $50,000 school to be erected at Ninth and Lenfesty Avenues.

New York

New York City and Vicinity.

Johnson Heating Co., 131 East Twenty-sixth Street, has been awarded the contract for remodeling the plumbing in the Anthony Kimble Showroom and Apartment Building.

I. Krasnor, 103 Varet Street, Brooklyn, will install the plumbing and heating in the new $25,000 public garage, to be erected for Walzer Bros., at 143 Bedford Avenue. Contracts for plumbing and heating in a $17,000 garage to be erected at South DeKale Avenue and East Irving Avenue, have also been secured by Mr. Krasnor

Johnson Heating Co., 131 East Twenty-sixth Street, New York, has secured the contract to install the heating in the $60,000 silk mill to be erected for James A. Batty Sons, at Gloversville.

Kingston and Vicinity.

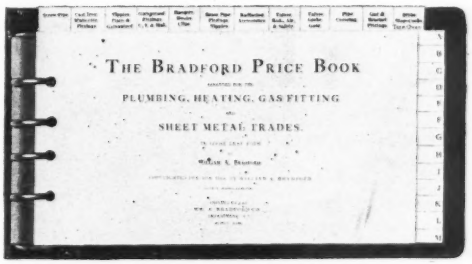
Wieber & Walter, 122 Wurts Street, Kingston, are to open a new plumbing establishment in Kingston on Broadway, where an attractive show room and office will be opened.

Harry Netburn, 73 Broadway, Kingston, has secured the contracts to install plumbing and heating in the Regent Waist Co.'s factory in New York City, the Glory Shirt Waist factory and in Halphren & Freedman shirt waist factory.

E. LeVerne Longyear, 635 Broadway, Kingston, is installing additional plumbing in the Fuller Shirt Co.'s factory, and is also busy installing a low pressure steam heating system and the plumbing in the Fessenden Shirt Co.'s building.

Conklin & Legg have opened a plumbing and heating estab-

Safety First



THE ONLY way for the plumbing and heating contractor to be assured of a living profit on his contracts is to KNOW that each item included in his estimates is priced right. Every article entering into a job should contribute its proportionate share to the profits.

The old plan of figuring this out with a pencil, or guessing at it, has been eliminated by the use of the

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It gives the cost, net and correct resale price on all standard articles, so you cannot go wrong either on your estimates or billing. Pays for itself over and over again.

The price is only $12. This includes revised sheets showing price changes as they occur for one year. Renewal subscriptions have never exceeded $10 a year.

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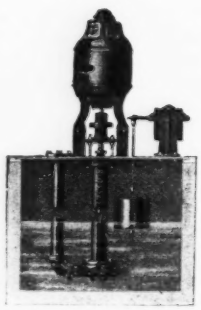

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Outfits may be built according to the requirements of each installation. Our standard construction sump pumps, Fig. 790, are regularly made in capacities of 75, 150 and 225 gallons per minute and have round cast iron sump cover 40 inches in diameter, shaft with case and discharge pipe for sump five feet deep, motor supports and flanged coupling ready to receive motor.

We will quote prices on outfits complete with motor and automatic float switch if desired, or pumps for larger and deeper pits, upon receipt of specifications. Twin pumping units and units with special sump covers, flexible couplings, or other variations from standard construction can be built to order at extra price.

Inquiries should state: The capacity desired; the total elevation from the bottom of the sump to the point of discharge; the horizontal distance from the sump to point of discharge into gravity sewer, with size of discharge pipe if already installed; the depth of sump; the size and shape of sump if other than standard cover is desired; the characteristics of the electric current available, whether direct or alternating, the voltage and if alternating, the phase and cycles.

RUMSEY PUMP COMPANY, Limited

EIGHTIETH YEAR

P. O. BOX 356-J

SENECA FALLS, :: :: N. Y.

lishment on Douns Street, Kingston, and are at present busy installing plumbing in two residences.

The Kingston Plumbing & Heating Co., Kingston, has recently opened an establishment in that city, and has booked many contracts, among them the contract for the plumbing installation in the American Crystal Works, and bathroom installations for W. Oppenheimer.

B. Loughron Co., 270 Fair Street, Kingston, has been awarded the contracts to install both heating and plumbing in the Cantine Martin paper factory, Saugerties; the Kingston National Ulster County Bank, Kingston; Katterman & Mitchell silk factory, Kingston, a garage at Newburgh, and the Norman Boggs residence in Woodstock.

Other Cities in the State.

L. M. Coyler & Sons, 628 Central Avenue, Albany, will install the plumbing and heating in three new houses to be erected in Woodlawn; the residence of H. Massey, and in a new home to be erected on Schenectady Road.

Pfau & Gilcoyne, 48 Ferry Street, Troy, are installing new heating systems in the First Baptist Church, the Hoosick Falls school, the new Catholic church, and have recently completed the plumbing and heating installation in a large school in Troy.

District of Columbia

Washington.

Federal Heating Co., 310 Thirteenth Street, Northwest, has secured the heating and plumbing contracts on the $200,000 showroom and assembly plant to be erected at Fourteenth and L Streets.

Lauxman & Sincell, 1844 Seventh Street, Northwest, will install the plumbing in the $60,000 moving picture theater to be erected by the Southern Aid Society of Virginia at 1901 South Thirty-seventh Street, Northwest, Washington.

Massachusetts

Boston and Vicinity.

Robert A. La Centra & Co., 75 Endicott Street, Boston, have secured the plumbing contract and Edgar W. Miller, 325 Eastern Avenue, Lynn, will install the heating plant in the $160,000, 32-apartment building to be erected for Chauncey Realty Trust, at 20-23 Chauncey Street, Cambridge.

Albert A. Touchet, 1 Byron Street, Boston, will install modern plumbing in the remodeled section of the large residence of Morris Rosenthal on Neptune Street, Beverly. Work has already been started.

George Fraser, of Westboro, has outgrown his old quarters and has recently moved into new quarters on Milk Street, where he is now conducting his plumbing business.

Tucker & Rice, of Worcester, have the contract for plumbing in the big new manufacturing plant of the Walden-Worcester Co., on Shrewsbury Street, Worcester. The factory and its equipment will cost $120,000.

A special committee of the Springfield city government, head by Alderman E. F. Leonard, has recommended an appropriation of $8,000 for a new public sanitary in the North End of the city. The station would be located in the old Hooker School Building, under the plan approved by the committee.

S. Pearl Brock, proprietor of the Brock Bros., plumbing establishment in Melrose, announces that on April 1st he will move to new and larger quarters at 535 Main Street, almost directly opposite his present store, where he has been located for many years. Mr. Brock has made arrangements with the Malden & Melrose Gas Light Co., to act as its special agents for Melrose, and in addition to his plumbing and heating business will carry a line of gas stoves, water heaters and other appliances. A portion of the new store will be devoted to the gas appliance department and will include an attractive display of these goods. Mr. Brock's establishment is one of the oldest in the plumbing line in the city and formerly was conducted in connection with a similar business in Cambridge, of which his brother was in charge.

Wisconsin

Milwaukee.

Wenzel & Henoch, 498 Twenty-seventh Street, have been awarded the contract to install the heating and plumbing in the new $75,000 sales and service building to be erected for the Wisconsin State Rubber Co., on Fourth Street, near Wells.

The Downey Heating & Supply Co., Sixth and Clybourn Streets, will install the heating, and David Stern Plumbing Co., 405 Chestnut Street, the plumbing in the 12-room parochial school for the St. Anthony Catholic Congregation at Fourth and Maple Streets.

Wausau.

N. P. Molter Plumbing Co., 206 Scott Street, has been awarded the contract for remodeling the plumbing in a large residence at 806 Scott Street.

The Columbo Heating Co., 112 Scott Street, will install the heating in the $10,000 colonial residence to be erected for W. C. Sampson.

Iowa

Des Moines and Vicinity.

T. F. Boller, 1405 Forest Street, will install the plumbing in the $8,000 residence to be erected for A. J. Coon at 3307 Lola Avenue.

Manley Plumbing Co., 1173 Twenty-fifth Street, has been awarded the plumbing contract on the $7,000 residence to be erected at 2903 Forest Avenue.

Parnell Sims, 725 Grand View Avenue, has secured the plumbing contract on the eight new $4,000, one-story residences to be erected on East Twenty-fourth Street, and on nineteen other one-story residences to be erected at 1446-1513 Mattern Avenue.

W. G. Madison, Ames, will install the heating and plumbing in the new $41,000 eight-room school to be erected for the Consolidated School District at Beaver.

Missouri

St. Louis and Vicinity.

St. Louis plumbers are witnessing a slight lull in work preceding the actual building season. Two weeks of severe weather has put a crimp in construction and caused jobbing work to increase. Some contractors say that a rest is more than welcome, as it is giving many of them time to prepare for the spring. There is much new construction underway, but few jobs, as yet, where plumbing contractors have started work. There is more contract work being figured and more supplies being purchased. Builders, who have been waiting to see the outcome of the price situation, have awakened to find that their position is perilous and that if they delay longer, they will be in danger of causing a serious set back in their projects. This tendency has been a much-discussed subject on the part of supply dealers for the past few months.

One jobber told "Domestic Engineering's" correspondent the contractors' and builders' laggardness to purchase supplies would not hurt the plumbing supply prices to any great extent as most manufacturers have been turning out as much materials as possible. However, he pointed out, the conditions might hurt the building situation, because an eleventh-hour demand would find manufacturers of some products unable to fill orders.

All wage adjustments for the 1920-1921 building season have been made and present indications are that St. Louis will have no labor trouble whatever during the next year.

The Modern Heating Co. has been awarded a contract to install the heating system in a three-story mercantile and apartment building which is being erected by Albert J. Goebel, at 5874 Delmar Avenue.

Only Two Moving Parts

The Ofeldt Automatic Water Regulator is built on the improved float principle, using a **metal** valve instead of rubber.

Will last indefinitely. No parts to wear out. Seats perfectly tight. Metal valve oscillates with water passing through, making it self-cleaning.

Designed especially to maintain proper water level in any size low pressure heating boiler and is suitable for high pressure boilers up to 15 H.P. and 100 lbs. pressure.

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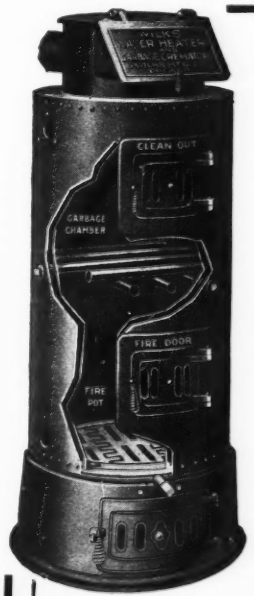
Makers of Water Tube Boilers for 25 years



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Burns any kind of soft coal. Deep, wide fire pot and garbage chamber. Large, convenient doors.

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Where the Signet Drain is installed there can be no back water.

A perfectly reliable trap that automatically keeps out sewerage, gas and germs.

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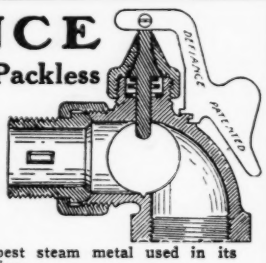

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Can easily be turned with the foot without stooping.

Only best steam metal used in its construction.

Guaranteed satisfactory

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ASK FOR CATALOG

The various contracts in connection with the erection of about 100 dwellings, aggregating $300,000, by the St. Louis Home and Housing Association, will not be announced until about March 20th or later.

The monthly report of the St. Louis Federal Reserve District says that various building supply manufacturers' outputs already have been greatly stimulated by the increase in construction. St. Louis building permits, the report shows, totaled 354 for last month, aggregating $1,236,320 as compared to 319 permits for $507,015 worth of work for the same period last year.

M. D. Woodling, 512 Reliance Building, Kansas City, Mo., will install the heating and plumbing in the $75,000 bakery, to be erected in Oklahoma City by the Campbell Baking Co., of Kansas City, Mo.

Kansas

C. F. Nonken & Son, Peabody, have been awarded the heating and plumbing contracts on the $60,000 consolidated high school to be erected by the Norwich Board of Education at Norwich, Kans.

Gustafson Plumbing Co., Salina, have secured the heating and plumbing contracts on the two-story school which is to be erected in that city. The contracts amount to $5,153.69.

California

San Francisco and Vicinity.

Nine bungalows, ranging in price from $4,350 to $5,000 were completed in Mission Terrace last week and all have been sold with the exception of two. The houses are well constructed throughout and the plumbing systems installed were of the latest sanitary types. Contracts are to be let within a few days for ten more houses of similar character, which will also be erected in the Terrace tract.

Architect J. F. Dunn is now taking sub-figures for a three-story and basement frame apartment building at the southwest corner of Sacramento and Scott Streets. The building will contain six apartments of six rooms and one bath each. The structure will cost about $38,000.

Architect J. F. Dunn has prepared plans for another high-class apartment house, to be erected on the western line of Scott Street, between Jackson Street and Pacific Avenue. The plans show five large residential apartments, each containing a large living room, dining room, kitchen and four bed rooms. The bath rooms are to be fully equipped with high-grade fixtures and will be tiled with recessed tubs. The building will be equipped with steam heat and modern ventilation.

Figures on a five-story steel and concrete addition to the Argyle Apartments, in McAllister Street near Hyde, are now being taken by Architect W. H. Crim, Jr. The plans include plumbing of the most modern type and a continuation of the present steam heating system into the new part of the structure. The improvements will cost $60,000.

The contract for the erection of a $200,000 auto sales building at the corner of Van Ness Avenue and McAllister Street has been awarded to the Clinton Construction Co.

Architect Paul F. De Martinit is completing plans for a two-story and basement commercial garage to be erected in the down-town district at a cost of $40,000.

A permit has been issued for the erection of a one-story salesroom at Twelfth and Howard Streets for a tire company. The contract for the construction work has been given to P. R. Ward at a price of $26,000.

Architect C. H. Skidmore is preparing plans for a $150,000 auto sales building to be erected in the automobile district shortly.

The local contracting firm of Palmer & Peterson have been awarded the contract for the erection of a two-story garage on the north side of Pine Street west of Leavenworth. The building will cost $43,500. Figures on plumbing and heating are being taken by the contractors.

A building permit has been issued for the erection of a $60,000 three-story auto sales building on the southeast corner of Jackson Street and Van Ness Avenue.

A one-story brick manufacturing building is to be erected on the southwest corner of Natoma and Seventh Streets under a contract given to Samuel Schell. The estimated cost is $28,000.

Los Angeles.

Building permits issued in Los Angeles during February at the office of Building Inspector J. J. Backrus totaled $3,286,415 in value, or more than three times the value of the permits issued in February of last year. The new buildings during February of last year were valued at $1,008,195. During the month just closed the number of permits totaled 1,518, as compared with 693 for the same month of last year.

According to the report of Inspector Backus, a total of 3,446 building permits, with a value of $7,472,681, were issued during January and February of this year.

If the present volume business is maintained throughout the remainder of the year the permits will set a new high record for the year of more than $50,000,000 in value.

The business of the office for the two months this year was an increase of $5,651,659 above the business for the corresponding months of last year, when the total permits for improvements were valued at $1,821,022.

Last month permits were issued for the contruction of 950 one-story frame dwellings having a value of $1,231,425; for 80 two-story frame dwellings with a value of $801,228, and for three story and a half dwellings valued at $11,700.

There were 23 permits for class C brick or concrete structures and 20 permits for tile buildings.

Pasadena

A banquet was tendered the local journeymen by the Pasadena Master Plumbers and Heating Contractors at the "Tea Cup Inn," on Monday evening, February 23rd. W. F. Creller, president of the Pasadena Master Plumbers' Association, acted as toastmaster and called upon many of the invited guests for speeches. Adolph Mueller, president of the H. Mueller Mfg. Co., of Decatur, Ill., gave an interesting talk on the Trade Extension Bureau, Standardization, Co-operation of the Master Plumbers Throughout the Country, and the benefit derived from organization. Mr. Mueller added that it was pleasing to see master plumbers and journeymen work harmoniously together and meet at such an enjoyable banquet.

Other Cities in the State.

The Pacific Gas & Electric Co. have announced that a modern office building will be erected in Virginia Street, Vallejo. Plans are now under way and construction is to start at an early date. The building will contain all modern improvements, including steam heat, a ventilating system and up-to-date plumbing equipment.

Architects Wallace & Bush, of San Jose, are preparing plans for a one-story auto sales room and a two-story apartment structure which are to be erected in South First Street.

Architect Henry Shermund, San Francisco, has completed plans for extensive alterations and additions to the three-story brick structure owned by O. D. Richardson and located in South First Street, San Jose. The building is to be prepared for the occupancy of a general merchandise store, and the remodeling will cost $30,000.

Plans and specifications for the new sewage disposal system at Turlock have been presented to the city trustees for approval. They were prepared by Jensen & Ross, sanitary engineers of Fresno. The plans will be sent to Berkeley, for the approval of the State Board of Health prior to contract for construction. The cost of the project is estimated at $60,000.

Architects Schwartz & Ryland, of Fresno, are now preparing preliminary sketches for the proposed high school building for Visalia. Three buildings are to be erected in the group housing the gymnasium, shops and domestic science departments. The cost is estimated at $110,000.

A new office and garage building is to be erected at the corner of Tulare and First Streets, Fresno.

A building is to be erected on the corner of Coast and Belmont Avenues, Fresno, for the occupancy of the Powell Undertaking Co. It will cost about $30,000.

A one-story garage is to be erected on the northwest corner of Fourth and Alice Streets, Oakland, for $23,000.

A store and office building is to be erected on the northwest corner of School and Pine Streets in Lodi, for $150,000. The plumbing, heating and ventilating systems are to be up to date.

The present bath house in Long Beach is to be torn down and a $300,000 structure erected in its place by the Long Beach Bath House & Amusement Co. The building will be five stories in height and will be capable of acommodating 10,000 bathers.

RAYMOND LEAD WORKS
735 So. Washtenaw Ave.
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Largest manufacturers in the
UNITED STATES
of
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FOR lasting quality and true capacity use *"KOVEN"* Pure Iron, Double Row Riveted, Galvanized Range Boilers, or *NACO* Galvanized Range Boilers made of open hearth steel. These boilers may be bought of jobbers everywhere.

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Flexible, non-disintegrating.
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Install a **Paul Money Maker Demonstrator** in your show window and watch the crowds gatner.

It is a complete water system which you may demonstrate to your customers under actual service conditions.

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A powdered chemical compound scientifically prepared for cleaning formation of uric acid and other stains from closet bowls and traps and urinals that are made from porcelain only.

No fumes, odor or dirt.

You can supply your trade with K. K. and make a good profit.

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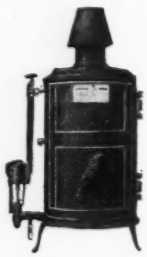

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Parrott Heater Company **224 21st Street DETROIT, MICH.**

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WHALE-BONE-ITE
REG. PAT. OFFICE
CLOSET SEATS

THE EFFICIENT CLOSET SEAT

HEAVY COVERING ASSURES LIFE-LONG SERVICE — ACID-PROOF — IMPERVIOUS — STANDS ABUSE LIKE A BOWLING BALL — CONCEALED HINGES — INDISPUTABLE QUALITY

RECOMMEND THIS PROFIT MAKER

ASK YOUR JOBBER OR SEAT DEPT.

THE BRUNSWICK-BALKE-COLLENDER CO.
623 SO. WABASH AVE. CHICAGO

Maryland

Baltimore.

Kirwan Plumbing Co., Munsey Building, Baltimore, has secured the contracts to install heating and plumbing in twenty-five new residences and garages for the University Homes Co., on Oak and Thirty-ninth Streets.

Charles T. King, 523 North Charles Street, and George W. Rebham & Co., 1133 North Milton Avenue, will install the heating and plumbing, respectively, in twenty-four new residences to be erected for George R. Morris at 2701-2719 and 3700-3720 Yosemite Avenue.

Enterprise Steam & Hot Water Heating Co., 600 North Howard Street, will install the heating plant, and Riggs, Distler & Stringer, 216 North Calvert Street, will install the plumbing in the $150,000 factory addition on Gay and Water Streets.

NEBRASKA.

John A. Anderson, 2404 Leavenworth Street, Omaha, has been awarded the contract to install the heating in the $240,000 court house to be erected by the Board of County Commissioners at Ord, Nebr.

Milton Rigers & Son, 1515 Harney Street, Omaha, and Schoolman Bros., 4114 North Twenty-fourth Street, have secured the heating and plumbing contracts, respectively, on eight new residences in that city.

Canada

Ottawa and Vicinity.

Bethell Bros. have just completed a contract for the Housing Commission in connection with the plumbing and heating in ten new dwellings. The contract price was $40,000. This firm states that prospects for spring are particularly promising and that it has in sight at the present time work approximating $50,000.

An indication that despite the present high cost of building many dwellings must be constructed in Ottawa and vicinity in the immediate future is contained in the announcement by the Housing Commission that at the present time there is pressing need for at least 3,000 new houses. The statement was made in connection with its application to the Provincial Legislature for the program of building next summer. In practically all circles now it is admitted that Ottawa must experience a building boom this spring—against its will, as it were—and in this, of course, the local plumbing and heating firms will be largely benefited.

The exchange situation continues to act as a handicap to local firms, particularly in view of the fact that materials have been so scarce and deliveries so uncertain that practically none of them were "stocked" to any extent.

Dullness is still marked among the local firms—the usual end-of-the-winter lull before the weather permits inauguration of building operations. What activity there is, is confined mainly to repairs.

Brantford.

A fair start for 1920 in the building construction program is witnessed by the issuance of $277,090 in building permits up to March 1st.

A call has been sent to all plumbing inspectors in Ontario to meet in Toronto on April 5th to form an organization to exchange ideas and to better acquaint themselves with general conditions, and to take up the pending provincial plumbing law which, when passed, will improve the trade.

Anguish & Whitfield are working on the New Merchants Banks, one at Tara and the other of Mt. Forest.

T. J. Minnes has secured the contract for the plumbing on the Steel Products new moulding shop.

Charles Taylor is finishing five residences at Waterloo Court.

Alfred Taylor is completing five residences on Arthur Street for Alexander Lamb.

R. H. Ballantyne will finish the plumbing installation in the Registry office in a short time.

LEGAL DECISIONS

Who Owns the Property in Plans and Specifications? Builder Contended Such Become His for Subsequent Use Without Pay—His Other Contentions and the the Court's Decision.

A decision touching the property rights in plans and specifications prepared under a contract has been handed down in the Supreme Court of Minnesota. In the case at bar an architect brought an action to recover, first, for services in preparing preliminary sketches or plans for a dwelling house for defendant which were not accepted or used; second, for the value of the use of the plans and specifications under which the building was constructed. The trial court held the plaintiff entitled to recover on both causes of action, and from a judgment against him the defendant appealed (174 N. W., 728).

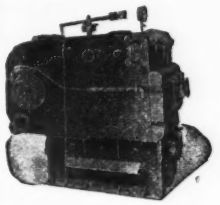
It appears that the defendant employed the architect to devise and prepare plans and specifications for a dwelling house, and to superintend the construction of it. This was done and the architect was paid $700 in full therefor. Thereafter defendant sold this house and had plaintiff prepare the preliminary plans and sketches for another house. These were rejected as unsatisfactory and defendant concluded to use the plans for the first house in building the second. Neither of the parties had the blue prints used in constructing the first house, but plaintiff had the original drawings from which the blueprints had been made. Defendant procured these drawings from plaintiff and had blueprints made, which he used in constructing the second house.

He insisted that, having paid plaintiff for his services in devising and preparing the plans and specifications for his former building, they had become his property, and he had the absolute right to make any use of them he saw fit without compensating plaintiff for such use. On this point the Supreme Court reviewed the authorities and gave the opinion that one who employs an architect to devise and prepare plans and specifications for a building and pays him therefore becomes the owner of such plans and specifications unless the contract provides that they are not to become his property. Gibbon vs. Pease, 2 Ann. Cases, 713.

But the court found as a fact that plaintiff was owner of the plans in controversy and that defendant procured them for use in constructing the second house under an agreement to pay for them. The specifications accompanying the plans contained a statement to the effect that all drawings and specifications were the property of plaintiff and were to be returned to him. The builder contended that this statement was not a part of the contract and was not binding upon or evidence against him, and that the court erred in admitting this provision of the specifications in evidence. Whether this provision was binding upon or evidence against the builder depended by the facts and circumstances brought out in the evidence which was decided against the builder.

Again, copies of the plans and specifications had been filed with the building inspector as required by the building regulations of the city in order to obtain a permit for the construction of the first house. The defendant builder contended that they thereby became public records and that in consequence thereof plaintiff lost all property rights in them. The court did not pass upon the effect of such filing as unnecessary, for it said regardless of this effect the parties could contract that as between themselves plaintiff should remain the owner of the plans and specifications and defendant should not use them again without paying for such use.

Judgment for the architect was affirmed.



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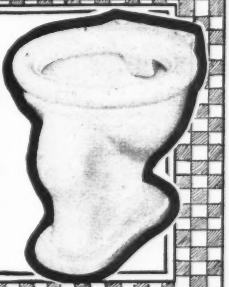

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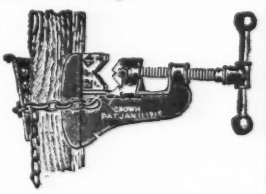

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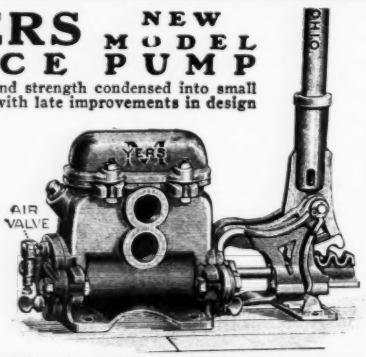

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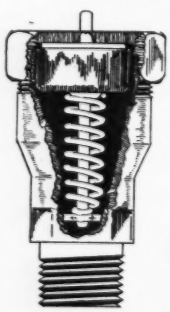

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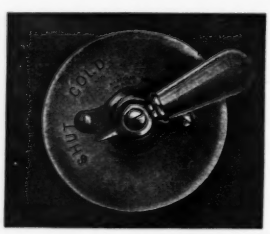


Write for Bulletin D-10-X

HOFFMANN & BILLINGS MFG. CO.
MILWAUKEE

BATHROOM NOT COMPLETE WITHOUT SCALES.

Are You Selling Them?

By Murray E. Crain.

AN advertising journal recently published an article on the fascination footprints hold for the average person. The paper went so far as to state that no other product or incident could grip and hold the interest of the average man or woman as footprints in a strange place. The writer ventures to disagree. He believes that if the average man were out on a desert and noted a strange footprint in the sand, with a pair of scales nearby, his interest in the former would be short-lived. The chances are that he would forget all about the tracks in his interest in the important question of whether or not he is gaining weight. If it were a woman, the footprints would not have the ghost of a chance to compete with the weighing machine. She would be eager to know just how much weight she had lost since starting her daily walks in the desert.

That this interest in scales, or at least the figures they give, is universal, is indicated by a walk up the main thoroughfare of any city these days. Many of the leading stores are cashing in on this interest by putting free weighing devices in front of their establishments, the idea being that after discovering the latest gain or loss of avoirdupois, Milady may become interested in the merchandise in the store windows and in the interior of the establishment. One floorwalker in a shoe store told the writer he counted up to a hundred in a few hours in an attempt to discover just how many persons were utilizing the scales in front of the store. Unfortunately, the floorman became disgusted at this juncture and abandoned his self-imposed task.

Everyone should have a pair of reliable scales in his bathroom, and the average person is so interested in the story the scales tell that it should be an easy matter for the modern plumber to attain a quick turnover on this product. The domestic engineer, of course, is expected to provide everything required for the bathroom, and those who have overlooked the profit in scales have passed up a winning line.

The writer met a business man on the street the other day and commented on the fact that he seemed to be gaining weight.

"You bet," said the business person. "I've put some pulleys and weights on my back porch, and I take fifteen minutes' exercise morning and night. Then I dash into the bathroom and take a cold plunge and a rubdown, and say, boy, how I do eat and work and sleep."

"You look it. Got some scales in your bathroom?"

"No. I'm looking for some. Where do you buy 'em, anyway?"

"Try your plumber."

He did, but it developed that the scales weren't carried by this particular member of the trade.

A trip through a hospital is a good argument as to why every plumber should be able to provide the home with devices to indicate the weight of the new generation. Every hospital of importance is inhabited by a dozen babies all of the time—brand new ones who must be fed and bathed and weighed every day. The weighing is as important as anything else, because it indicates whether or not the newcomer is getting all of the nourishment and rest it should have.

After ten days, the baby and its mother usually leave the institution for their own home. But the necessity of the daily weighing continue. And the old-fashioned spring scales no longer serve. Scales must be reliable, or they are worse than useless. Modern mothers know all about the necessity for close tab on their offspring, and a dumb man could probably put over a sale of this kind.

Then, the H. C. L. is still with us. The housewife no

longer places any great amount of faith in her butcher and grocer. She watches them closely while they are weighing the steak and the tomatoes, and if she is really interested in economy, she will repeat the operation when she gets home. If she hasn't reliable scales in the bathroom, where food can be weighed as easily as anything else, she is overlooking a bet, and the plumber is the man to call her attention to the oversight.

Nothing need be said about the way Madam rolls and rolls around the house in order to keep superfluous avoirdupois at bay for a few more years. The rolling is likely to lose its fascination if the lady has no means of keeping accurate account of the ounces and pounds banished by dint of strenuous exercise. Many of them have scales and the others should be willing victims to the lures held out by the salesman-plumber.

Tuberculosis is still the dread disease of the country, and when the malady is in its early stages, physicians are inclined to place much dependence in the story told by their scales. The lungs of the patient may tell little or nothing, but if he has night sweats and is losing weight, he is placed under treatment for tuberculosis. A pair of scales in the home has enabled many a man to realize the facts in ample time to begin proper treatment.

A piano salesman, for example, would give a good deal to have the opportunities flung in the lap of the plumber by the very nature of his calling. The plumber can walk into almost any house, while the salesman must earn his way in by persuasive arguments. The plumber has back of him an authority which to the ordinary business man, is almost professional in its weight. In other words, if the plumber says a certain arrangement of pipes is unhealthful, the owner of the house is likely to regard the statement just as authoritative as if his physician made it. As far as scales are concerned, the physician would be the last to deny their value in the home. In fact, many of our leading physicians already have bought scales from the plumber for their offices and their own homes. The arguments of the master plumber in this connection are therefore backed up by the physician. Everyone should have scales in his bathroom, and the only question is as to who will sell them.

EXPORTS AND IMPORTS SHOW GAINS IN JANUARY.

Record-breaking imports and a decided increase in exports feature the January trade statement released by the Bureau of Foreign and Domestic Commerce of the Department of Commerce.

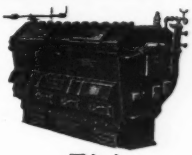
Exports for the month are placed at $731,000,000, as compared with $682,000,000 in December and $623,000,000 in January last year. For the seven months ended with January our exports totaled $4,594,000,000, against $3,797,000,000 for the corresponding period of the previous year.

Imports jumped to $477,000,000 from $381,000,000 in December. In January, 1919, imports were valued at $213,000,000. For the seven months ended with January imports were valued at $2,768,000,000 as compared with $1,698,000,000 for the similar period of last year.

Gold imports for the seven months' period ended with January amounted to $38,000,000 as compared with $14,000,000 in 1919 and $79,000,000 in 1918. Gold exports for the seven months' period are placed at $319,000,000 against $23,000,000 in 1919 and $173,000,000 in 1918.

Exports of silver for the seven months' period amounted to $122,000,000 against $179,000,000 in 1919 and $52,000,000 in 1918.

Shop Shorts, No. 25.—Totaling a long list of items on an estimate is made absolutely safe when an adding machine is used. Many a contractor has made costly mistakes before investing in such equipment.



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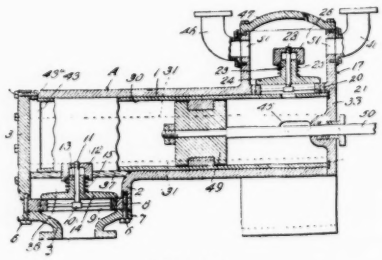
Wheeler Condenser & Engineering Co., Carteret, N. J. 47

SHUR-TITE STOPS 'EM

Patents

Plumbing Department.

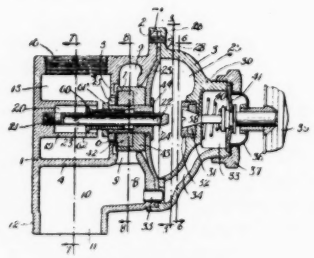
1,331,846. Pump. Henry C. Frahm, Halcyon, Cal. In a device of the class described, the combination of a cylindrical body portion having an intake valve casing at one end thereof and an outlet casing at the opposite end thereof, said intake valve casing having a horizontal valve plate, valve members carried by said plate, a partition member carried by the central portion of said valve plate and having an arcuate head on its upper portion, a pump cylinder extending through said cylindrical body and extending into each of said casings, said pump cylinder being smaller than said cylindrical body to form passage ways upon the exterior of the cylinder, said cylinder resting upon said arcuate head, thereby forming a



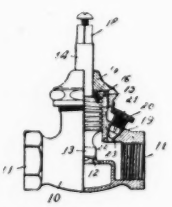
1,331,846.

pair of compartments in said intake casing, a horizontal web carried within said outlet casing and having an arcuate web thereon, said pump cylinder engaging said last mentioned arcuate web, thus forming a plurality of compartments in said outlet casing, valve means carried by said horizontal web, whereby a valve means will communicate with each of said last mentioned compartments, intake means connected to the intake casing, valve means connected to the outlet casing, and a piston reciprocally mounted within said pump cylinder.

1,331,535. Stop and Waste Valve. William H. Smith, East Cleveland, Ohio. A valve of the kind described comprising a body portion having an internally threaded projection located between the neck and outlet of the valve and a waste plug threaded in said projection adapted to abut the underside of the valve cap when said plug is in the extreme open position.



1,331,707.

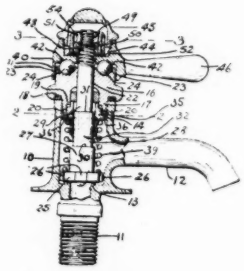


1,331,535.

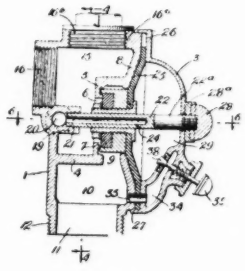
1,331,707. Hydraulically Operated Valve Mechanism. Philip Haas, Dayton, Ohio. In a hydraulically operated flushing valve mechanism, the combination with a valve body provided with a water inlet, a tank aperture, a flushing discharge aperture, a flushing valve interposed between the tank aperture and discharge aperture, a pressure chamber for closing the valve and holding it normally in closed position, a relief valve for said pressure chamber, said flushing valve being provided with an

aperture extending therethrough, and a stationary part secured to the valve body and extending loosely through said aperture, of a wat r inlet chamber, of small diameter within the valve body communicating with said water inlet, and closely surrounding said stationary part, and having a discharge aperture adjacent to the flushing valve in communication with the tank aperture, and a throttling device carried by said valve, and partially closing the discharge aperture of said water inlet chamber when the flushing valve is in closed position, to facilitate the transfer of a portion of the water from the water inlet chamber to the pressure chamber.

1,331,865. Self-Closing Faucet. Harry J. Geurink, Cleveland, Ohio, assignor to The Vulcan Brass Mfg. Co., Cleveland, Ohio. In a self-closing faucet, the combination of a body portion having a water inlet and outlet, and provided with a valve seat, a valve stem, a valve arranged on the lower end of said valve stem, a bonnet mounted on the body portion and having a flange provided with notches, a sleeve arranged on the valve stem and having lugs adapted to fit into said notches, a coil spring arranged on the valve stem below the sleeve and bearing against the sleeve and the valve, a handle arranged on the valve stem and nuts secured on the end of the valve stem.



1,331,865.

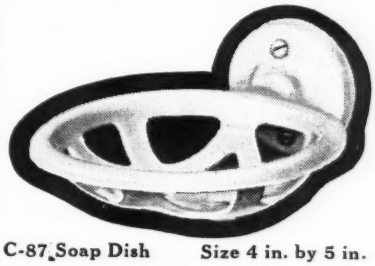


1,331,706.

1,331,706. Hydraulically Operated Flushing Valve Mechanism. Philip Haas, Dayton, Ohio. In a hydraulically operated flushing valve the combination of a valve body provided with a tank aperture of relatively large area, a flushing discharge aperture of correspondingly large area, a flushing valve interposed between said tank aperture and flushing discharge aperture, a pressure chamber for closing said valve and holding it in a closed position, a relief valve for said pressure chamber, said valve body being provided with a water inlet passage of relatively small area, and an inlet chamber communicating therewith and having a reduced discharge apertures at all times in communication with the tank aperture and a communicating passage of small area and capacity extending from said inlet chamber to the pressure chamber, whereby the restricted discharge outlet for the inlet chamber insures at all times and under conditions of pressure, a supply of water to the pressure chamber, to effect the closing of the flushing valve, and to hold it normally closed.

1,331,735. Process of Treating Sewage. John W. Wilson, San Diego, Cal. The process of segregating and disposing of antiseptic sewage and purifying putrefiable sewage from a source adjacent to that of said antiseptic sewage, consisting in conducting the putrefiable sewage into an influence that effects disintegration of solid material present in the sewage, and retarding the solid material during its distintegration, while allowing it freedom to float or sink; conducting the disintegrated material and liquid material together into an influence that will effect liquefaction of the disintegrated material conducting the thus liquefied material and the primarily liquid material, together, away from said influences, and then conducting the antiseptic sewage into the presence of the liquefied and primarily liquid effluent at a location out of the presence of the putrefiable sewage.

SNO-WITE



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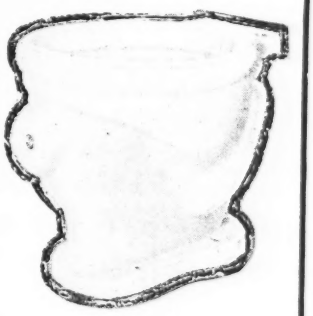

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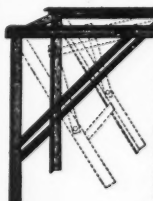

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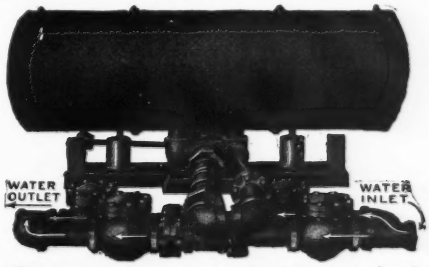

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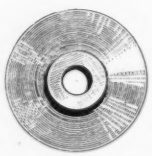

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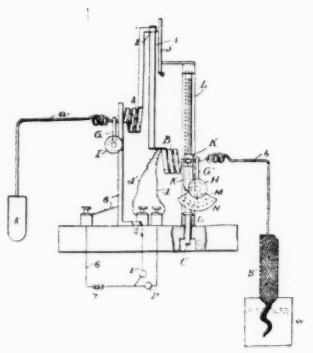
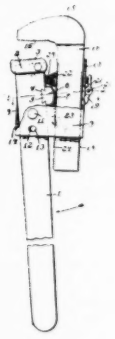
Heating Department.

1,331,981. Hygrometer for Regulating Humidifying and Heating Systems. Stuart W. Cramer and William B. Hodge, Charlotte, N. C., assignors to Parks-Cramer Company, Fitchburg, Mass., a Corporation of Massachusetts. In apparatus of the kind described a moisture control valve having a source of energy to operate it and a device in control of such energy and valve, in combination with wet and dry bulb thermo-expansive elements and means whereby such elements operate said energy-controlling device by their expansive movement, such means including a lever and means whereby the leverage effect thereof may be altered to vary the relative effects of the wet and dry bulb expansion.

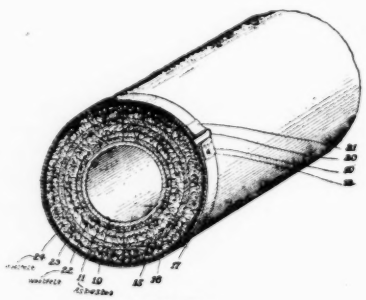


1,331,981.



1,332,157.

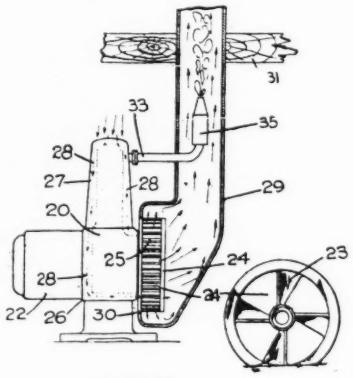
1,332,157. Pipe Wrench. John W. Bauman and Irvin W. Bauman, Sassamansville, Pa. In a pipe wrench, a lever having a jaw at its inner end, a guiding and connecting element pivotally mounted on the lever and including spaced guide bars, a movable jaw having an arm slidable in the guiding and connecting element, the said arm having teeth in its side adjacent to the lever and also having teeth in its outer side, a dog mounted on the outer side of said element and arranged to engage the last named teeth, to adjustably secure the movable arm in the guiding and connecting element, a toothed member fixed to the lever and arranged to engage the first named teeth of said arm between the spaced guide bars and thereby secure the movable jaw when the lever is in one position, and a spring interposed between one of the guide bars and the lever and acting on the guiding and connecting element to normally hold the latter in the position required to disengage the toothed arm from the said toothed member.



1,331,532.

1,331,532. Pipe Covering. Nicholas Simonovich and Samuel Simonovich, New York, N. Y. A steam pipe covering comprising an innermost layer of asbestos felt, a second layer of wool felt relatively thicker than the first named layer, a third relatively thin layer of hair felt, a fourth layer of wool felt, a muslin cover disposed thereover, a lining over said muslin cover, and a plurality of pliable bands for uniting the sections of said coverings firmly with the surface of a pipe.

1,331,649. Ventilating System. Charles F. Kettering, Dayton, Ohio, assignor to The Domestic Engineering Company, a Corporation of Ohio. In a device of the character described, the combination with an air-cooled combustion engine having exhaust passages; of a fan positively driven by the engine for effecting the circulation of the cooling air; means associated with the fan for conducting away the heated air



1,331,649.

driven off from the engine by the fan; and means connected with the exhaust passages and with the first named means at a point beyond the fan whereby the air passing out the first named means will assist in the conducting away of the exhaust gases.

How About Soil Pipe?

All standard and medium weights of soil pipe should be eliminated and extra heavy should be the minimum, recommends the National Bureau of Standardization. This Bureau has been organized to effect progress in the plumbing field. Send your ideas to the Bureau without delay.

The Bureau of Insular Affairs has received a cablegram from the governor-general of the Philippine Islands, stating that the 1918 cenus returns show that the total population of the Philippine Islands is 10,350,640; of this number, 9,495,272 are Christians and 855,368 are non-Christians.

The Director of Sales announces that the Surplus Property Division will offer for sale to all classes of buyers a quantity of surplus drugs, medicines and hospital equipment and supplies on which fixed prices have been established and which have heretofore been offered for sale to state and municipal hospitals, free clinics and similar institutions exclusively. The present offer will be in effect from March 5 to April 5, 1920.

Miss Agnes Nestor, chairman of the Legislative Committee of National Woman's Trade Union League and vice-president of the International Club Workers' Union, stated at a joint hearing before the Senate and House Labor Committee, March 4th, that of the 40,000,000 wage earners in the United States, 12,000,000 are women, and in their interest a woman's bureau in the Department of Labor should be created by statute as it was organized in 1918 during war-time emergency.

An Associated Press dispatch from London states that Turkey is stripped of virtually all her territory in Europe, but retains the sacred places, by treaty now being completed by conference of foreign ministers and ambassadors.

It Is Announced from Ottawa that the right of employes of the Dominion Government to join labor unions was denied in a letter sent March 5th by the Cabinet to the Dominion Trades and Labor Congress. The letter adds that insofar as private industry is concerned, the Government already has sanctioned the workers' right to organize and has recognized the wisdom of collective bargaining on more than one occasion.

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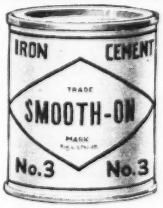

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Classified Advertisements

The charge for advertisements under this heading is 6 cents a word, including heading and address; $1.00 minimum. To insure insertion, copy and remittance should reach us by Wednesday morning.

Situations Open

WANTED—DRAFTSMAN FOR STEAM heating and ventilation work. State age, experience and salary desired. Headquarters in Oklahoma. Address, 107 "Domestic Engineering," Chicago. 3-6/27

WANTED—SALESMAN CALLING ON the plumbing and heating trade to carry a side line of tools. Address 104, "Domestic Engineering," Chicago. 2-28/tf

WANTED—FIRST-CLASS NON-UNION plumber for Illinois city of 60,000; must be lead worker and a first-class workman, no others need apply. Steady work to the right man. Wages, $1.00 per hour. Address 105, "Domestic Engineering." 2-28tf

PLUMBERS AND STEAM FITTERS wanted for the Sunny South. Open shop conditions in an open shop town. Wages $1.00 per hour, eight hour day. Must be first class mechanics. Pettit-Galloway Co., 114 E. Seventh St., Little Rock, Ark. tf

WANTED—SALES CORRESPONDENT by manufacturing concern in Chicago. Experience in plumbing, heating or similar branch of building industry required. A splendid opportunity for the right man. State age, experience, education, references and salary desired. Replies treated strictly confidential. Address 112. "Domestic Engineering," Chicago. 3-13

Situations Wanted.

POSITION WANTED—Plumber and steam fitter wishes position as foreman with plumbing company, or with general contractors doing their own plumbing. Would also consider position with gas or water company. Address 113, "Domestic Engineering," Chicago. 3-13

POSITION WANTED IN SOUTHERN California by first class man as manager or foreman of plumbing shop, or charge of construction work. Also experienced in estimating and collections. Address 111, "Domestic Engineering. 3-13/20

For Sale.

FOR SALE—UP TO DATE PLUMBING, Heating, and Sheet Metal Business. Well stocked and equipped, extablished with the best class of patrons, and doing a fine business all seasons of the year. Exceptional opportunity. I must give my time to other business. Will lease or sell building $4,000 cash required. For particulars, Chas. Geiser, Lander, Wyo. 1-24—tf

FOR SALE—PLUMBING AND HEATing business in town 1500. Only shop in town. Also cover four adjoining towns and country. About 15 miles from Chicago. Address 110, "Domestic Engineering," Chicago. 3-13/20

Miscellaneous.

SELL YOUR SURPLUS COUPLINGS and fittings. Write us. The A. & J. Mfg. Co., 557 W. Lake St., Chicago. tf

WANTED—SECOND HAND CASE OF drawers or bins for Plumbers washers, etc. Suitable for show room. Give measurements and price. W. J. Boase, 124 S. Church St., Rockford, Ill. 3-13

WANTED—52" SQUARING SHEARS TO cut No. 18 iron. Foot or power operated. Must be in good order. Write, stating best cash price. The Ofeldt Gas Fired Boiler Co., Nyack, N. Y. 2-28-3-6-3-13

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TIME SHEETS, JOB TICKETS, ESTImating blanks, illustrated stationery, blotters, etc. For plumbers. Reasonable. Send for catalog and price list. Prompt service. P. Fink & Sons, 56 N. 7th St., Philadelphia, Pa. 11-22 tf

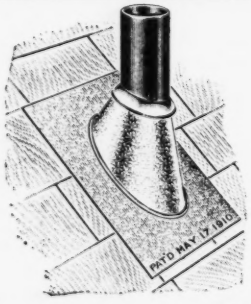
Books for Your Trade Library.

PRACTICAL METHODS OF SEWAGE DISPOSAL. By H. N. Ogden and H. B. Cleveland. Covers in detail the problem of sewage disposal for residences, hotels and institutions where connections to city sewers is not available. Size 5¾x9¼ in. 132 pages. Cloth. Price, $1.50.

SANITATION IN THE MODERN HOME. By John K. Allen. Explains the proper arrangement and equipment of bath room, laundry, kitchen, etc. A suitable book to present to your customer or prospective one. Size 5½x8 in. 272 pages. Cloth. Price, $2.00.

PRACTICAL MANUAL OF STEAM AND HOT WATER HEATING. By Edward R. Pierce. A comprehensive book, especially appreciated by the busy steamfitter. Every phase of steam and hot water heating is explained in every-day language, easily understood. Unlike the usual dry, technical treatise. Size 6x9 in. 340 pages. Cloth. Price, $2.50.

Domestic Engineering
407 S. Dearborn St., Chicago



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